This Issue Exceeds 83,500 Copies

THE JOURNAL

OF THE

American Medical Association

Subscription, $7.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 101, No. 4 | 535 North Dearborn Street, CHICAGO, ILL. | JULY 22, 1933

CONTENTS AND SUBJECT INDEX

Importance of Clinical-Pathologic Conferences in the Work of the Practitioner as a Teacher: Chairman's Address. Reginald Fitz, M.D., Boston.....253

The Rôle of Diiodotyrosine in Hyperthyroidism: A Comparison of the Therapeutic Effect of Diiodotyrosine with Inorganic Iodine. Alexander B. Gutman, M.D.; Lawrence W. Sloan, M.D.; Ethel Benedict Gutman, and Walter W. Palmer, M.D., New York.....256

Dermatitis Produced by Cosmetics (La Gerardine). Lester Hollander, M.D., Pittsburgh.....259

Fundamentals of Asphyxia. Yandell Henderson, Ph.D., New Haven, Conn.....261

Hormone Diagnosis of Viability of Pregnancy. Frank Spielman, M.D.; M. A. Goldberger, M.D., and R. T. Frank, M.D., New York.....266

Methylene Blue Solutions in Potassium Cyanide Poisoning: Report on Cases 2 and 3. J. C. Geiger, M.D., San Francisco.....269

Salmonella Suipestifer Infections in Man. Ann G. Kuttner, M.D., and H. D. Zepp, A.B., Baltimore...269

Meningococcic Meningitis in Infancy. Alan Brown, M.D. (Tor.), and Nelles Silverthorne, M.B. (Tor.), Toronto.....272

The Form of the Stool as a Criterion of Laxation. George R. Cowgill, Ph.D.; William E. Anderson, M.A., and Albert J. Sullivan, M.D., New Haven, Conn.....273

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Vitamin D in the Treatment of Acne Vulgaris. Abraham Doktorsky, B.S., and S. S. Platt, B.S., Chicago 275

Hemostatic Scalp Clip. Alfred W. Adson, M.D., Rochester, Minn., and Edgar F. Fincher, Jr., M.D., Atlanta, Ga.....276

Submucous Lipoma of the Cecum. H. R. DeLuca, M.D., Bridgeport, Conn., and Philip Henstell, M.D., New Haven, Conn.....277

Arteriovenous Fistula of the Left Internal Carotid Artery and Jugular Vein. D. R. McIntyre, M.D., Shreveport, La.....278

Congenital Stenosis of the Pylorus: Two Cases. Charles E. Tribble, M.D., New Haven, Conn.....278

SPECIAL ARTICLES

Report of American Committee on Optics and Visual Physiology..278

Report of Committee on Compensation Tables for Eye Injuries..279

COUNCIL ON PHARMACY AND CHEMISTRY 280

COMMITTEE ON FOODS 281

EDITORIALS

Problem of Medical Patents.....284

Manifestations of Anoxemia.....285

"Trace" Elements in Nutrition..286

CURRENT COMMENT

Chlorophyll and the Diet.....287

(Subject Index on next page)

ASSOCIATION NEWS 287

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Sec. 1103, Act of Oct. 3, 1917, authorized on June 14, 1918.

Copyright, 1933 by the American Medical Association.

NEXT ANNUAL SESSION, CLEVELAND, OHIO, 1934

A NEW BOOK for the GENERAL PHYSICIAN

Pepper & Farley's Blood Diagnosis

This is a *brand new book*

It was written to help the general physician

It tells *how* to make blood tests

It interprets the findings in *clinical terms*

It is complete

It is down to the minute

It tells how to avoid common errors

It includes 400 diseases *not* primarily of blood origin

It points the way to more effective treatment

It contains 40 pages on the Anemias

And 30 pages on the Leukemias

It clearly describes the components of the blood

It is the *finest book* on blood diagnosis published

Octavo of 553 pages, with 3 plates in colors. By O. H. PERRY PEPPER, M.D., Professor of Clinical Medicine; and DAVID L. FARLEY, M.D., Associate in Medicine, University of Pennsylvania. Cloth, $6.00 net

Another Important SAUNDERS BOOK on PAGE 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "MI," Medicolegal; "ME," Medical Economics.

Abortion, repeated, etiology....306
therapeutic, in arrested tuberculosis....303
x-ray, sex hormone diagnosis of viability.*266
Academy of Sciences of Apulia....296
Acarbia vs. acidosis....*265
Acidosis in asphyxia....*262
Acne vulgaris, vitamin D in....*275
Actinomycosis....ab-327
closed ovarian....ab-332
Albee, F. H., awarded Bowdoin prize....289
Altitude, high, and anoxemia....E-285
American Board of Dermatology and Syphilology examination....290
Committee on Optics and Visual Physiology, report....*278
Amniotic Fluid, quantity....ab-328
Anemia, nutritional....ab-323
Anesthesia, local diothane, in urology....ab-320
Aneurysm, ruptured hepatic....ab-322
Angiomas, cavernous, electrotherapy....ab-328
Angiospasm, magnesium sulphate in....ab-327
Antisepsis, conference on....288
Apiol poisoning....ab-332
Appendicitis, atropine as diagnostic aid..ab-322
Arsphenamine panmyelophthisis....ab-329
Arteries, carotid, fistula....*278
Aschheim-Zondek Test in teratoma testis.ab-321
Asphyxia death, economic aspect....ab-312
death, medical examiners' findings....ab-311
fundamentals....*261; ab-314
infant deaths due to....ab-310
Association News....287
Asthma, skin testing in children....ab-322
Azoospermia....303

Bacillus, fusiform, pathogenicity....C-300
cultures, uses in war....294
Bacteria capsule, staining....ab-319
Balneology and the practitioner....296
Blood, acid-base balance....*262
anoxemia, manifestations....E-285
pressure, high, effects of iodine on insulin in....304
Bone tumors, treatment....ab-322
Book Notices....307
Books Received....Adv. page 28
Bowdoin Prize awarded Dr. F. H. Albee...289
Brain, ventriculography....ab-328
Bran and stool formation....*273
Bruns, Earl H., memorial to....292
Bureau of Investigation....299

Cancer diagnosis, center for, Genoa....296
clinic at University Hospital, Michigan..288
Cecum, submucous lipoma....*277
Cheilitis after herpes of lip....306
Chlorophyll and the diet....E-287
Chompret Prize, Dr. C. T. Osborne awarded.287
Chromidrosis....303
Cleidotomy, Chatunzew's modification....ab-332
Clinical-pathologic conferences....*253
Columbia University, changes....289
Committee on Compensation Tables for Eye Injuries....*279
Committee on Foods....281
Congress of Legal Medicine, France....294
Correspondence....300
Council on Medical Education....306
Council on Pharmacy and Chemistry....280
Cyanephidrosis....303
Cyanide, potassium, poisoning, methylene blue for....*269

Deaths....297
Dermatitis from La Gerardine....*259
Deutsches Aerzteblatt....295
Diabetes Mellitus, effects of iodine on insulin in....304
Diet and chlorophyll....E-287
Diphtheria toxoid and toxin compared....ab-320
Dispensary admission plan, Rochester, N. Y..289
Dixon Memorial Lecture....291
Dysentery and Bacterium dispar (Andrewes)....ab-326

Ear, internal, and the sympathetic....ab-317
Edema, merbaphen and mersalyl in....303
Endocarditis, bacteria vs. rheumatic....ab-322
Endometrioma, uterine, tuberculous infection....ab-326
Epilepsy with hyperinsulinism....C-301
Epithelium, cutaneous, in immunity response....ab-320
repair in vitamin A deficiency....ab-320
Erythrocytes, picture, central regulation.ab-331
Ethics, problem of medical patents....E-284
Eugenics in Germany....294
Evidence; witnesses, medical expert; bias may be proved....MI-310
Exercises, postpartum....304
Eye injuries, Committee on Compensation Tables for....*279

Feces, form as criterion of laxation....*273
Ferenczi, Alexander, death....297
Fertilization and ovulation....302
Fibroblasts, evolution....296
Fistula of left internal carotid and jugular.*278
Fletcher, Walter, death....293
Folliculin in involutional states....ab-315
Foreign Letters....292
French Assembly of General Medicine....293
Gas masks, distribution, Italy....296
Gastro-Enterostomy, anterior, wound healing in....ab-318
Glycosuria, renal....302
Goiter, Exophthalmic, radiotherapy....ab-323
International Goiter Conference....291
Gonorrhea cutireaction, local immunization in....ab-330
in immature women....ab-315
Gordon, D. P., warning against....291
Government Services....292
Hair waving solution, dermatitis from....*259
Hay Fever, skin testing in, in children..ab-322
Headache and menstruation....304
Health: "good health" defined....MI-310
at Memphis....290
Mississippi state board wants old reports..288
service revised, U. of Chicago....288
talks....291
U. S. Public Health Service....292
Heart disease, treatment, physical methods in....296
electrocardiogram, Q wave....ab-331
function tests in tuberculosis....ab-330
hormones, action....ab-329
stab wound....ab-318
Hemorrhages, gynecologic....296
Hemostatic scalp clip....*276
Henry County (Ia.) Society, thirtieth anniversary....288
Herniotomy, swelling of scrotum after....305
Hospitals adopt dispensary admission plan, Rochester, N. Y....289
Catholic Hospital Association resolutions.290
Provident Hospital for Negroes dedicated.288
Hyperthyroidism, diiodotyrosine in....*256
Hypopyon ulcers, treatment....ab-324

Ileum, chronic obstruction....296
Insurance, health, criticism, England....293
International Goiter Conference....291
Intestines, cancer (primary) in Meckel's diverticulum....ab-332
ileus and sodium chloride....ab-318
Iodine, effects on insulin....304
Jejunum, inflammatory ulceration and stricture....ab-324
Journal of Pharmacology and Experimental Therapeutics transferred....290

Knee joints, resected....ab-318
La Gerardine, dermatitis from....*259
Langstein, Leo, death....295
Laryngoscopy, fundamentals....ab-313
Larynx, stenosis, cicatricial....ab-317
License of Dr. S. P. P. Strange lost....290
Lipoma, submucous, of cecum....*277
Lips herpes, cheilitis after....306
Liver, mitochondria and dextrose-glycogen equilibrium in....ab-315
Lymph Glands, tuberculous....ab-325

Malaria and urobilinuria....ab-325
Malpractice: fractures, roentgenograms; failure to make....MI-309
Marriages....297
Medical Education curriculum, Italy....296
Medical Practice Acts: osteopathy; drugs, use of....MI-309
Medicine, profession of, reorganized, Germany....295
Medicolegal....309
Meetings, Coming Meetings....310
Meningitis, meningococcic, in infancy....*272
Menopause, folliculin in....ab-315
Menstruation and headache....304
Milk, contaminated, causes epidemics....291
Miloslavich, E. L., goes to Yugoslavia....290
Minerals, "trace" elements in nutrition..E-286
Mountain regions, physiology....296
Myositis and tenosynovitis....304

Necropsies, permission to perform....*253
Nephritis, perinephritis....ab-319
Neutropenia, pentnucleotides in....303
News....287
Nose, hemorrhage, in pregnancy....ab-317
Nutrition, "trace" elements in....E-286

Ophthalmology, International Congress of..295
Osborne, O. T., receives Chompret Prize...287
Osteomyelitis, acute, benzene for....ab-327
Ovary, closed actinomycosis....ab-332
Ovulation and fertilization....302
Ovum, retrograde function....ab-328

Pacific Roentgen Club organized....287
Pancreas, epilepsy with hyperinsulinism.C-301
Paralysis, General, diathermy for....C-301
remissions in....ab-323
Patents, medical, problem of....E-284
Pediatrics, courses in....288
Southern Pediatric Seminar....289
Pentnucleotides, action in neutropenia....302
Peptic Ulcer, circular resection in....ab-332
treatment by jejunal catheter....ab-331
Pharmacopeia, British....292
Physicians, hardships in distressed areas, England....293
German, asked to resign....291
Pneumothorax, Artificial, complications..ab-327
spontaneous complicates simultaneous bilateral....ab-330
Poliomyelitis, transmitting to splenectomized guinea-pigs....ab-330
Pollens in Michigan....306
Practice, Medical; restraint of by contract; "radius of 15 miles" construed....MI-309
Pregnancy and tuberculosis....303
epistaxis in....ab-317
polypeptidemia in....296
sex hormone diagnosis of viability....*266
surplus tissue in abdominal wall after...305
toxemia, treatment....ab-325
varicose veins in....305
Psoriasis, tar and ultraviolet radiation in.ab-324
Puerperal Infection, bacteriologic control.ab-326
Puerperium, postpartum exercises....304
Purpura, traumatic....ab-326
Pylorus, congenital stenosis....*278
Pyuria of children....ab-331

Queries and Minor Notes....302

Rabies, neuroparalytic accidents in treatment....ab-325
Radio talks of American Public Health Association....291
Radio Program....287
Radium, effect of gamma rays....ab-316
Resuscitation, modern methods....ab-312
Rickets, calcium metabolism in....ab-329
Rockefeller Institute changes....289
Roentgen Rays, effect....ab-316
new portable unit....293
Pacific Roentgen Club organized....287

St. Louis Clinics offers prize....289
University, faculty changes....289
Salmonella suipestifer infections....*269
Salyrgan, anatomic lesions from....ab-317
in edema....303
San Francisco County Medical Society....287
Sarcoma growth and vitamins....ab-332
Scalp clip, hemostatic....*276
Scholarships for foreign physicians....296
Sciatica, diagnosis....ab-331
Scrotum, swelling after herniotomy....305
Smallpox vaccination and B. M. A....292
Società Medico Chirurgica de Catania....296
Society for Prevention of Asphyxial Death..310
Society Proceedings....310
Spinal Cord, subacute combined degeneration....ab-320
Spirillum of Plaut Vincent....C-300
Spotted Fever, diagnosis....ab-316
in Montana....289
in Wyoming....290
Staining bacteria capsule....ab-319
State Board, Arizona, elects....287
State Board Examinations....306
Sterility, azoospermia....303
Stomach, syphilis....ab-318
hunger contractions and anoxemia....E-285
Students, sanatorium for, France....294
medical, number not restricted, Germany.295
Sympathectomy, chemical, in gynecology..ab-328
Syphilis, secondary, thyroid changes in..ab-330

Teeth caries, calcium metabolism....ab-329
Tenosynovitis and myositis....304
Teratoma testis, Aschheim-Zondek test in..ab-321
Tetanus prevention....293
Thyroid, functional changes in secondary syphilis....ab-330
Tinning industry, poisoning in....305
Tonics and Sedatives....Adv. page 24
Tubercle Bacillus, demonstration in blood..ab-330
Tuberculosis, allergy in....ab-323
increase, Pennsylvania....290
pregnancy and....303
pulmonary, heart function test in....ab-330
red spots on patient's cheeks....ab-329
tuberculous glands and....ab-325
Tumor: bone; trauma as cause of....MI-309
growth and vitamins....ab-332
inoculation, vs. vitamin E....ab-332
Typhoid, H and O agglutination in....ab-320
liability of municipality....MI-310
Typhus, cultivation of virus; active immunity....ab-316
endemic, diagnosis, immunity tests....ab-316

University of Chicago health service revised.288
Urethra, female, stricture....ab-321
traumatic rupture....ab-321
Urobilinuria and malaria....ab-325
Uterus cancer....ab-319
cancer of cervix....ab-317
excision, abdominal....ab-315

Varicose Veins in pregnancy....305
Vein, jugular, fistula....*278
Vertigo....305
Viosterol treatment of acne vulgaris....*275
Vitamin A deficiency, epithelium repair in....ab-320
E, influence on inoculation tumors....ab-332
tumor growth and....ab-332
Vomiting, postoperative control....C-301

Workmen's Compensation Acts: medical treatment; operation; refusal to undergo....MI-310
aspect of asphyxia death....ab-312

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 101, No. 4 CHICAGO, ILLINOIS JULY 22, 1933

IMPORTANCE OF CLINICAL-PATHOLOGIC CONFERENCES IN WORK OF THE PRACTITIONER AS TEACHER

CHAIRMAN'S ADDRESS

REGINALD FITZ, M.D.

BOSTON

The Council on Medical Education and Hospitals has assembled some striking figures in its most recent report.[1] In 1932, there were 6,562 registered hospitals in the United States with a total capacity of more than 1,000,000 beds; the number of patients admitted to these hospitals during the year was 7,228,151. To carry on such a huge hospital practice, 7,757 interns and 2,018 resident physicians were employed. These 10,000 apprentices worked under the guidance of a teaching staff of 101,518 older and more experienced visiting men. On the shoulders of this visiting staff, therefore, falls the responsibility for carrying on the most important concerted effort at systematic postgraduate instruction that is being conducted in this country at the present moment.

Since more than 100,000 of the 125,000 practicing physicians in this country are directly associated or affiliated with hospitals, it follows that the vast majority of physicians who attend the annual meeting of the American Medical Association must occupy responsible hospital positions, have working under them varying numbers of interns and residents, and, therefore, are to be considered as actively engaged in the teaching of medicine. I have an impression that many practitioners are not wholly alive to their responsibilities as teachers and do not carry on such teaching of medicine as they are expected to perform, as enthusiastically and vigorously as is desirable.

The importance of clinical-pathologic correlation as a means of teaching medicine has been recognized for many years. Yet in a group of 664 hospitals which the Council investigated in 1931, from this point of view, only 86 of them (13 per cent) performed necropsies in more than one half of their fatal cases. These figures suggest that there still exists a good deal of inertia toward such an important method of instruction on the part of the hospital teaching staff. It is on the educational value of the clinical-pathologic conference that I shall dwell here.

From the Medical Clinic of the Peter Bent Brigham Hospital.

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Hospital Service in the United States, J. A. M. A. **100**: 887 (March 25) 1933.

PERMISSION TO PERFORM NECROPSIES

There are certain hospitals in this country in which for many years necropsies have been performed in nearly all fatal cases. Such hospitals, however, are usually special hospitals of one sort or another. Comparatively few institutions that offer an apprenticeship in general practice have done so well. This fact, already has received comment from time to time, and efforts have been made toward improving the situation. For example, all hospitals now desiring approval by the American Medical Association for the training of residents must examine post mortem at least 15 per cent of their fatal cases. This ruling is a logical one, stressing as it does adequate training in pathology as an important qualification for a good residency, and the belief that on the whole the percentage of necropsies obtained in any hospital forms a very good index of the professional efficiency of the institution.

There are various methods that can be employed to obtain permission to make pathologic examinations in an increasing number of cases: public education is one of the most important. People must learn what a postmortem examination is and why it is important. Articles for the layman, such as the one called "I want a Postmortem Examination Made When I Die," by Dr. Emil Bogen,[2] or the one by Dr. Oscar T. Schultz,[3] "Tales That Dead Men Tell," have played an important part in public education of this character. Since physicians must set the pace in matters of this sort, the example of a man like Dr. W. S. Thayer is most inspiring. In the Boston *Herald* for December 15, 1932, there appeared an Associated Press article under the caption "Dr. Thayer Wills Body to Science." This article quoted Dr. Thayer's will as beginning:

> I direct that on my death a necropsy be performed upon my body for the purpose of scientific study at the earliest possible moment after my death, preferably by my dear friend William G. MacCallum.
>
> I should like especially to have the condition of my coronary arteries and heart muscle carefully explored.
>
> Especially do I desire that my friend Dr. Adolph Meyer may, if he desires, have every opportunity to study my brain. The interest which may attach to this lies in the circumstance that I have had for about fourteen years, since a resection of my nasal septum, a complete anosmia.
>
> After a complete necropsy, after which any parts of my body which may be useful may be preserved, I direct that the remains be cremated and the ashes buried at Sleepy Hollow graveyard at Concord, Mass.

Such an example is bound to affect the public mind. I hope many physicians will follow it.

2. Bogen, Emil: When I Die, Hygeia **4**: 696 (Dec.) 1926.

3. Schultz, O. T.: Tales that Dead Men Tell, Hygeia **7**: 1201-1204 (Dec.) 1929.

Cooperation with undertakers and funeral directors, too, is an important step in increasing a hospital's autopsy percentage. Ten years ago, Krumbhaar [4] described the necessity for such cooperation and showed how, in the Philadelphia General Hospital, by this and other steps, the necropsy percentages were increased rapidly from 10 to over 50. In 1925, the New England Hospital Association listened to a very stimulating address on "Requirements for Cooperation Between Hospitals and Funeral Directors" by Mr. Arthur H. Chandler,[5] president of the Massachusetts Funeral Directors' Association, and, as judged by the ensuing discussion, this paper had a far-reaching effect on the hospitals in New England.

Fundamentally, however, the necropsy percentages of any hospital depend on the staff. For ten years I have had the privilege of being associated with the Peter Bent Brigham Hospital in Boston. During this decade our pathologists have examined 66 per cent of all patients dying in the hospital. This is one of the few general hospitals in the country with such a record for accomplishment of thorough work. It is not amiss, therefore, to describe how the record is maintained.

What Dr. Harvey Cushing [6] has termed "the personality of a hospital" has much to do with the activities of the pathologic laboratory. Since the Peter Bent Brigham Hospital opened, it has been the tradition for the resident, visiting and nursing staff to treat each patient as though he or she owned the place. We have put ourselves out to make our guests feel at home, to become well acquainted with them and with their friends and relatives, to be sympathetic with their idiosyncrasies and to understand thoroughly not only their diseases but also—and sometimes this is much more important—their social, economic and psychologic problems.

It also has become a tradition with us to explain to patients and their relatives the necessity for whatever procedure is indicated; to tell them what we hope to accomplish by treatment and to be as patient as possible with those who are distraught or prone to misunderstand. This is carried out by frequent interviews with the patients in the wards. Each day, too, after ward rounds, the senior house officers assemble at the front of the hospital to talk to the friends and relatives of the patients. Here all questions are answered and the personal relationship is established that exists between a practicing physician and the families of his patients. And, finally, if treatment has failed and death has occurred, the senior house officer in charge of the ward in which the fatality has taken place asks the nearest relative or friend for permission to carry on a pathologic examination. He, as a well educated physician should, tells the friends or relatives of deceased patients what has happened and why further examination is important; and he assures them that such an examination is not in the least disfiguring but merely a necessary operation to make sure that everything possible in treatment has been done. In the majority of cases, as our records show, no great objection is encountered.

The examination is conducted expertly and with the same regard for technic and care that is displayed by all good surgeons. A careful record of the observations is made, and, at last, a letter describing the significance of the observations in regard to the individual case is sent with a word of condolence to the patient's relatives and family physician.

This general course of procedure in completing the final study of our cases has been effectual for so many years and in the hands of so many different interns that I am fully convinced of its efficacy. An intern who treats his patients and their relatives considerately and well can generally, forever after, get them to do anything he wishes.

THE CABOT CLINIC

Just as it is important for members of the hospital staff who are engaged in training interns to encourage a complete and careful clinical study of each case, so is it equally important for them to make sure that the pathologic material of the hospital is used to best advantage for educational purposes. This can be accomplished in various ways.

More than twenty-five years ago Dr. Richard Cabot introduced in the Harvard Medical School an interesting and popular teaching exercise which he still maintains. Every other week he comes to the Peter Bent Brigham Hospital and meets in the amphitheater a group of students and staff. He is given an abstracted case record of a certain patient whom he has never seen and of whose case he knows nothing. He reads the record aloud, comments as he sees fit on the history and the physical and laboratory examinations, inspects such roentgenograms as he wishes to look at, reads the "follow-up" notes and finally makes a diagnosis. He explains why he arrives at his diagnosis in this particular case, discusses, on the way, differential diagnosis, the physical signs or laboratory data which are essential or misleading, and the significance, in his experience, of this or that point. Having made a diagnosis, he asks the pathologist for the actual observations. These are given in detail and are often accompanied by gross and microscopic demonstrations. Thus, the correctness of Dr. Cabot's diagnosis is established or refuted beyond peradventure. Dr. Cabot aims to make diagnoses that are unequivocal and definite, and he never hedges; he makes an earnest attempt to correlate clinical and pathologic observations to improve not only his own diagnostic acumen but also that of his audience.

I have always found this exercise most stimulating. It has been fitted to hospitals elsewhere, as Dr. Steinberg [7] of Toledo has shown, but its success, in Boston at least, depends on Dr. Cabot's personality. To carry on the exercise properly, the clinician should be pungent and witty, have a positive way of stating things, should know nothing about the case before the time of discussion, and should be entirely fearless and unashamed to be found wrong by a keen pathologist.

THE MAYO CLINIC STAFF CONFERENCE

When I was working in Rochester, Minn., the clinical-pathologic staff conferences of the Mayo Clinic were equally valuable and interesting. The staff met each Wednesday evening and each member was supplied with a typewritten summary of all fatal cases of the previous week. A very short abstract of each case was given with a note on the diagnosis, treatment and pathologic observations. Each case was then discussed in detail by the pathologist and the importance of the various pathologic observations was described. The

4. Krumbhaar, E. B.: The Need for Postmortem Examinations and Method of Securing Them, J. A. M. A. **80**: 1682-1683 (June 9) 1923.
5. Chandler, A. H.: Requirements for Cooperation Between Hospitals and Funeral Directors, Boston M. & S. J. **194**: 728-732 (April 22) 1926.
6. Cushing, Harvey: Consecratio Medici, Boston, Little, Brown & Co., 1928, p. 276.
7. Steinberg, Bernhard: Autopsies and the Hospital Staff Conference, Proc. Ann. Cong. M. Educ., 1929, pp. 1-6.

pathologic interest of the cases was not so much stressed, however, as was the possibility of devising new methods of diagnosis or treatment to prevent the future occurrence of similar cases. Thus, for example, in that particular period of time an undue number of patients with thyroid disease and with jaundice appeared to be doing badly. As a result, Dr. Henry Plummer before long introduced the use of compound solution of iodine (Lugol's solution), and the thyroid fatalities disappeared, and Dr. Waltman Walters began studying blood coagulation and liver function experimentally and in jaundiced patients, with the result that methods were soon developed by which cases of this type were prepared scientifically for operation and rendered good instead of poor surgical risks.

This experience in the Mayo Clinic has made a deep impression on my mind, demonstrating as it does the possibilities of team play in the advancement of medical knowledge. I have often thought that large hospitals, especially large municipal hospitals with a quick "turnover," might do well to establish similar conferences for the visiting and resident staffs. It is very important to know the type of case that is being admitted to such a hospital at any given season of the year, whether in general disease is severe or mild, which type of disease produces the fatalities that occur and what are the major problems. This information can be obtained and made generally available only by staff conferences of the Mayo Clinic type. If such conferences are attempted, however, the spirit of self-sacrificing team play must be fostered. The staff conferences must be well attended. There must be no backbiting nor unfair criticism. Every one must make an honest effort to improve the work of the hospital, concentrating material for investigation, when necessary, and giving those with a bent for clinical investigation all possible opportunity, support and encouragement.

THE PETER BENT BRIGHAM HOSPITAL CONFERENCES

Still another valuable method for making use of the pathologic material is employed at the Peter Bent Brigham Hospital. One day a week for an hour there is an x-ray conference at which the roentgenologist demonstrates the particularly interesting films of the week. A brief history of each case is given and the roentgen observations are correlated with the clinical examinations. Cases that have been examined by the pathologic department are utilized to particular advantage; gross and microscopic appearances are compared with those of the roentgenogram, and the advancement of any disease is traced as clearly as possible by serial films. Finally, there is an exhibition of tissues that have been removed by the surgeons, or of abnormalities discovered at necropsy by the pathologists. This is a very important exercise. It is attended by the entire staff and links together firmly the combined activities of the clinical, radiologic and pathologic staffs of the hospital.

One day a week, too, we have a more formal clinical-pathologic conference. Here, completely studied cases are discussed. Case histories and clinical examinations are compared with pathologic observations, and the life history of disease in a given case is described from beginning to end. The exercise is a popular one, well liked by students and staff. I know of no better method of teaching applied pathology to a group of clinically minded interns and students.

PUBLISHED CASE REPORTS

Finally, the hospital teaching staff must remember that one of its important duties is to train men to write medical papers properly. Professor Christian, with us, has always made it a point to encourage each one of his interns to carry out some piece of original work as part of his training. Since interesting cases worthy of record are constantly under observation and followed up, many interns add to the literature by reporting one or more of the carefully and completely studied cases that have been observed. In writing such a paper, the intern learns how to assemble literature and thus how to use a library; how to compile a bibliography, and, most important of all, the fact that medical writing is difficult and laborious. Such an experience is a valuable feature of effective intern training and, if carried on elsewhere, will do much to help American medical literature. For several years, the Alleghany County Medical Society of Pennsylvania [8] has tried an interesting experiment along this line. Each year the society offers a prize of $50 for the best case report submitted by interns of any approved hospital in the county. In judging the material submitted, brevity, general interest of the case, completeness of detail and literary style of the composition each receive due consideration. No doubt, the possibility of winning such a prize improves the work of the interns of the hospitals in Alleghany County to a perceptible degree.

These, in brief, are some of the ways in which the pathologic work of hospitals in which interns are trained can be utilized for teaching purposes. No doubt there are many other ways, equally valuable, to accomplish this purpose. Each institution must develop the method best suited to itself. To make such teaching of greatest value, however, enthusiasm on the part of the teaching staff is essential. A great deal can be accomplished to improve the scheme of graduate-teaching in hospitals approved for interns if each practitioner who is on such a hospital staff remembers Dr. Cushing's advice:

> Example has much to do with the perpetuation of tradition, especially where there is a succession of hero-worshipping and imitative juniors; and if a hospital's personality is, as I believe it to be, its chief asset, the thought should quicken the sense of responsibility of everyone. He who is willing to do something more than follow a prescribed routine and who merges himself most with the active indoor life of the institution, giving even at personal sacrifice the most time to the attainment of this end, is certain to be the best and longest remembered.

721 Huntington Avenue.

8. Alleghany County Medical Society: Rules Case Report Contest, 1932.

Agenesis of the Corpus Callosum.—Since 1812, eighty-two cases of agenesis of the corpus callosum have been reported, in fifty-one (62 per cent) of which it was complete and in thirty-one (38 per cent) partial. Agenesis of the corpus callosum is usually associated with other anomalies of the brain, such as polygyria, embryonic arrangement of sulci, absence of olfactory nerves and partial separation of the frontal lobes. The age of distribution of agenesis ranges from birth to 73 years of age, the majority of patients being in the first decade of life. The mentality of the patients varies from idiocy to mediocre intelligence, corresponding somewhat with the associated anomalies of the brain. The etiology of this condition is unknown, although many speculations have been suggested.—Barker, R. C., and Graves, G. O.: Partial Agenesis of the Corpus Callosum, *Arch. Neurol. & Psychiat.* **29**:1054 (May) 1933.

THE RÔLE OF DIIODOTYROSINE IN HYPERTHYROIDISM

A COMPARISON OF THE THERAPEUTIC EFFECT OF DIIODOTYROSINE WITH INORGANIC IODINE

ALEXANDER B. GUTMAN, M.D.
LAWRENCE W. SLOAN, M.D.
ETHEL BENEDICT GUTMAN
AND
WALTER W. PALMER, M.D.
NEW YORK

In a number of publications which appeared recently,[1] particularly in the German literature, it was reported that the administration of diiodotyrosine to patients with hyperthyroidism causes a striking amelioration of symptoms and a sharp fall in the basal metabolic rate. The response to diiodotyrosine was found to be more marked than that expected with compound solution of iodine (Lugol's solution) and is believed to be not an iodine effect but a specific diiodotyrosine response *sui generis*. Remission was obtained with diiodotyrosine in cases refractory to iodides,[1e] and the need of thyroidectomy could be obviated in less severe cases.[1i] These authors regard diiodotyrosine as the medication of choice in the management of hyperthyroidism. However, although a controlled comparison of the effects of diiodotyrosine with the response to more commonly used iodine compounds would seem to be indicated by the therapeutic importance and theoretical interest of these observations, no such study has been made, so far as we know. A record of our experience with diiodotryrosine in the preoperative management of patients with hyperthyroidism as compared with our results with compound solution of iodine and sodium iodide may therefore be of interest.

The therapeutic effect of diiodotyrosine is also of more general interest, since diiodotyrosine is now known to be one of the constitutent amino-acids of thyroglobulin.[2] Its significance in the economy of the thyroid gland, particularly in the development of hyperthyroidism, has long been a matter of conjecture. Harington and Barger[3] regarded diiodotyrosine as an intermediate in the synthesis of thyroxine, formed, probably, "by the coupling of two molecules of diiodotyrosine with the loss of one side chain." Although never verified experimentally, this suggestion has been widely accepted as a reasonable working hypothesis. A more significant rôle has been ascribed to diiodotyrosine recently by Abelin,[4] who suggests that the physiologic activity of the thyroid hormone is the resultant of the antagonistic effects of thyroxine and diiodotyrosine, normally in equilibrium. This balance is destroyed in

TABLE 1.—*Effects of Administration of Diiodotyrosine to Hyperthyroid Patients*

Case	Age	Sex*	Admission Basal Metabolic Rate Above Normal	Days of Bed Rest	Basal Metabolic Rate: After Rest Before Diiodo	Basal Metabolic Rate: After One Week of Diiodo	Basal Metabolic Rate: After Two Weeks of Diiodo	Clinical Response to Diiodotyrosine	Iodine Content Dry Gland: Total, per Cent	Iodine Content Dry Gland: Thyroxine, per Cent	Iodine Content Dry Gland: Ultrafiltrable, per Cent	Iodine Content Dry Gland: Percentage Ultrafiltrable, Precipitated with Silver Sulphate	Thyroxine I / Thyroglobulin I per Cent
								Diffuse Goiter with Hyperthyroidism					
1	45	♀	105	4	78	54	53	Satisfactory	0.281	0.055	0.042	79	23.0
2	44	♀	81	5	..	53	38†	Satisfactory	0.116	0.0084	0.039	74	10.9
3	43	♂	80	3	67	37	46	Satisfactory	0.201	0.039	0.033	67	23.2
4	25	♂	78	4	75	32	22	Very good	0.134	0.0076	0.045	89	8.5
5	30	♀	74	3	63	39	39	Satisfactory	0.293	0.055	0.034	82	21.2
6	26	♀	70	5	60	47	51	Satisfactory	0.171	0.026	0.043	56	20.3
7	24	♀	66	10	43	29	21	Very good	0.293	0.069	0.024	42	25.6
8	19	♀	64	3	59	36	29	Satisfactory	0.214	0.037	0.031	68	20.2
9	26	♀	64	4	..	25	25	Satisfactory	0.254	0.069	0.017	53	29.1
10	40	♀	61	8	45	32	26	Satisfactory	0.234	0.059	0.019	47	27.5
11	43	♀	60	3	44	..	28†	Satisfactory	0.152	0.012	0.046	89	11.3
12	52	♂	59	3	76	42	35	Satisfactory	0.112	0.011	0.032	75	13.7
13	26	♀	55	4	40	..	28	Satisfactory	0.094	0.018	0.011	73	21.7
14	21	♀	51	4	55	30	27	Satisfactory	0.268	0.059	0.023	57	24.1
15	34	♀	50	4	53	37	..	Fair	0.087	0.0043	0.045	78	10.2
16	41	♀	48	5	49	34	35	Satisfactory	0.152	0.026	0.037	57	22.6
17	30	♀	47	2	..	49	39	Fair	0.494	0.132	0.013	54	27.4
18	27	♀	47	3	27	9	..	Fair	.....	.....	.....	..	....
19	36	♀	41	4	32	16	11	Very good	0.078	0.010	0.016	56	16.1
20	26	♀	38	5	44	33	11	Very good	0.132	0.024	0.023	50	21.8
21	43	♀	36	3	32	..	31†	None	0.454	0.103	0.030	67	24.3
22	33	♂	27	4	39	36	..	Satisfactory	0.061	0.0024	0.023	57	6.3
23	17	♀	..	3	83	..	47§	See text	0.379	0.083	0.030	72	23.8
24	38	♀	..	..	46	..	48‡	See text	0.319	0.051	0.040	..	18.3
25	62	♀	..	..	28	..	32†	See text	0.253	0.028	0.064	80	14.8
								Nodular Goiter with Hyperthyroidism					
26	50	♀	58	4	42	32	29	Satisfactory	0.212	0.046	0.020	65	24.0
27	49	♀	47	4	30	22	11	Fair	0.254	0.060	.....	..	24.4
28	44	♀	46	2	..	25	..	Satisfactory	0.087	0.012	0.013	73	15.8
29	57	♀	42	10	19	21	..	None	0.245	0.050	0.012	50	21.5
30	49	♀	36	4	22	11	3	Satisfactory	0.134	0.026	0.016	59	25.5

* Male, ♂; female, ♀. † After ten days. ‡ After twelve days. § After one month.

From the Departments of Medicine and Surgery, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.

1. (*a*) Kommerell, B.: Ueber die Behandlung des Morbus Basedowii mit Dijodtyrosin, München. med. Wchnschr. **78:** 1386 (Aug. 14) 1931. (*b*) Schürmeyer, A., and Wissmann, E.: Ueber die Wirkung von Dijodtyrosin bei der Behandlung des Basedow, Klin. Wchnschr. **11:** 673 (April 16) 1932. (*c*) Parhon, C. I., and Ballif, L.: Syndrome basedowien évoluant vers le myxoedème à la suite du traitement par la diiodotyrosine, Bull. et mém. Soc. méd. d. hôp. de Paris **56:** 601 (May 9) 1932. (*d*) Schittenhelm, A.: Schilddrüsenproblem und Jodstoffwechsel, Deutsche med. Wchnschr. **58:** 803 (May 20) 1932. (*e*) del Castillo, E. B., and Dassen, Rodolfo: Tratamiento del hipertiroidismo por la diyodotirosina, Semana méd. **2:** 335 (Aug. 4) 1932. (*f*) Snapper, I.: Over de Behandeling van Basedowpatienten met Dijoodtyrosine, Geneesk. gids. **10:** 957 (Sept. 30) 1932. (*g*) Steinitz, E., and Thau, E.: Ueber die Behandlung des Morbus Basedowi mit Dijodtyrosin, Deutsche med. Wchnschr. **58:** 2001 (Dec. 16) 1932. (*h*) Zimmerman, O.: Ueber den Einfluss des Dijodtyrosins auf Hyperthyreosen, Med. Klin. **29:** 82 (Jan. 13) 1933. (*i*) Thau, E.: Ueber die Behandlung des Morbus Basedowi mit Dijodtyrosin, Ztschr. f. klin. Med. **123:** 448, 1933. (*j*) Günther, F.: Ueber die Wirkung von Dijodtyrosin bei der Basedow Krankheit, Klin. Wchnschr. **12:** 625 (April 22) 1933.

2. Harington, C. R., and Randall, S. S.: Isolation of dl-3, 5-Diiodotyrosine, J. Soc. Chem. Ind. **48:** 296 (March) 1929. Foster, G. L.: Isolation of 3, 5-Diiodotyrosine from the Thyroid, J. Biol. Chem. **83:** 345 (Aug.) 1929; Isolation of dl-3: 5' Diiodotyrosine from the Thyroid Gland by the Action of Proteolytic Enzymes, Biochem. J. **25:** 1032, 1931.

3. Harington, C. R., and Barger, G.: Constitution and Synthesis of Thyroxine, Biochem. J. **21:** 169, 1927.

4. Abelin, I.: Einfluss des Dijodtyrosins auf den hyperthyreotischen Stoffwechsel, Biochem. Ztschr. **233:** 483, 1931; Probleme der Schilddrüsen-physiologie, Klin. Wchnschr. **10:** 2201 (Nov. 28) 1931.

pathologic states of the thyroid gland; hyperthyroidism being associated with a preponderance of thyroxine, myxedema with an excess of diiodotyrosine. The favorable influence of diiodotyrosine in hyperthyroidism is therefore regarded as the result of the restoration of normal equilibrium between thyroxine and diiodotyrosine in the diiodotyrosine-deficient gland.[5] The evidence for this view is based on the following observations: 1. The decrease in liver glycogen caused by feeding thyroid to rats is less marked if diiodotyrosine is given simultaneously in appropriate doses.[4] 2. The elevation of the basal metabolic rate caused by feeding thyroid to rats is decreased by added diiodotyrosine.[4] Iodides are ineffective.[6]

The studies reported here were made on a group of thirty unselected bed patients who showed definite clinical and metabolic evidence of hyperthyroidism. The results are summarzed in table 1. In five cases the thyroid gland was nodular; in the remainder, diffusely enlarged. With three exceptions, to be discussed later, none of the patients had received iodine prior to admission. A careful clinical estimation of the hyperthyroid state was made and the basal metabolic rate determined on admission and again after two or more days of bed rest with phenobarbital as the only medication. The administration of diiodotyrosine was then begun, the usual dose being 100 mg. a day (containing approximately as much iodine as in 0.5 cc. of compound solution of iodine). A clinical and metabolic check-up was again made after one and two weeks of medication. Partial thyroidectomy was performed shortly thereafter, and portions of the resected gland were examined histologically and chemically. The clinical impression of the response to diiodotyrosine was checked by a numerical evaluation according to the severity of symptoms and signs. In all but six cases there was a gain in weight during the first week of medication averaging about 2 pounds (900 Gm.) per patient. The largest gain was 6 pounds (2,700 Gm.). The average gain in weight during the second week was slightly less. The basal pulse rate showed a definite and satisfactory drop in all but six cases, in which the initial basal pulse rate was low and remained essentially unchanged. In two cases a slight rash appeared. As not infrequently observed with compound solution of iodine and sodium iodide, the clinical improvement of some patients seemed more satisfactory than the basal metabolic determination would indicate, particularly during the second week of treatment.

The postoperative course of these patients did not differ notably from those prepared for operation with inorganic iodine. A routine histologic examination revealed no distinctive differences in the glands in this series, the changes being those associated with iodine-treated hyperthyroid glands:[1b] hyperplasia, cuboidal and columnar acinous epithelial cells, focal collections of lymphocytes and accumulation of colloid, which frequently showed vacuolization.

TABLE 2.—*A Comparison of the Distribution of the Fall in the Basal Metabolic Rate in 185 Cases of Hyperthyroidism in Which Compound Solution of Iodine or Sodium Iodide (A) Was Given, with the Reduction in Basal Metabolic Rate in 30 Cases of Hyperthyroidism in Which Diiodotyrosine (B) Was Given*

B. M. R. After Rest, Before Medication Above Normal		No. of Cases	Basal Metabolic Rate After Medication										Average Fall in B. M. R., Points	
			Below 0	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	Series A	Series B
15-19	A	3	.....	3 (100%)	.....	.....	.....	.....	.....	.....	..	.....	11	
	B	1	.....	.....	.....	1 (100%)	.....	.....	.....	.....	..	.....		—2
20-29	A	19	2 (11%)	2 (11%)	5 (26%)	8 (42%)	2 (11%)	.....	.....	.....	..	.....	9	
	B	3	.....	1 (33%)	1 (33%)	.....	1 (33%)	.....	.....	.....	..	.....		8
30-39	A	38	1 (3%)	8 (21%)	12 (32%)	13 (34%)	4 (11%)	.....	.....	.....	..	.....	18	
	B	4	.....	.....	1 (25%)	1 (25%)	2 (50%)	.....	.....	.....	..	.....		8
40-49	A	39	1 (3%)	1 (3%)	14 (36%)	13 (33%)	7 (18%)	2 (5%)	.....	1 (3%)	..	.....	20	
	B	10	.....	.....	1 (10%)	5 (50%)	3 (30%)	1 (10%)	.....	.....	..	.....		15
50-59	A	32	.....	5 (16%)	5 (16%)	11 (34%)	7 (22%)	3 (9%)	.....	.....	..	1 (3%)	27	
	B	3	.....	.....	.....	2 (67%)	1 (32%)	.....	.....	.....	..	.....		25
60-69	A	26	.....	.....	2 (8%)	4 (15%)	9 (35%)	6 (23%)	3 (12%)	2 (8%)	..	.....	26	
	B	4	.....	.....	.....	1 (25%)	1 (25%)	1 (25%)	1 (25%)	.....	..	.....		23
70-79	A	17	.....	.....	2 (12%)	6 (35%)	2 (12%)	5 (29%)	1 (6%)	1 (6%)	..	.....	38	
	B	3	.....	.....	.....	1 (33%)	1 (33%)	.....	1 (33%)	.....	..	.....		38
80-89	A	7	.....	.....	.....	.....	1 (14%)	3 (43%)	1 (14%)	2 (29%)	..	.....	35	
	B	2	.....	.....	.....	.....	1 (50%)	1 (50%)	.....	.....	..	.....		40
90-99	A	4	.....	.....	.....	2 (50%)	.....	.....	2 (50%)	.....	..	.....	53	

The response to diiodotyrosine of three cases previously treated with inorganic iodine is of particular interest with respect to the specificity of the diiodotyrosine effect. In each instance, the response to iodides and to diiodotyrosine seemed to be very similar:

CASE 23.—An American girl, aged 17 years, presenting a classic picture of exophthalmic goiter, had been treated with inorganic iodine for two weeks relatively early in the course of the disease and gave a clear history of improvement. About six months later she was admitted to the hospital following an exacerbation of symptoms with a basal metabolic rate of +35, which dropped to +9 in seven days. Operation was postponed, but she was given compound solution of iodine in intermittent

5. Kommerell,[1] Steinitz and Thau,[1] Zimmerman.[1]
6. Carson, D. A., and Dock, W.: The Effect of Iodine on Experimental Hyperthyroidism in Man, Am. J. M. Sc. **176**: 701 (Nov.) 1928.

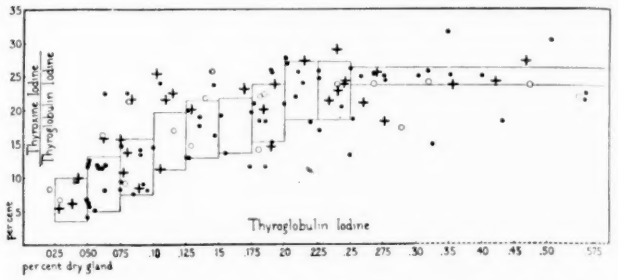
doses and her progress followed in the clinic. The response was fair at first, but the symptoms became more severe about ten months later. At that time diiodotyrosine was given and for a period of about two and a half months there was definite improvement, the basal metabolic rate dropping from +58 to +29. Then, as previously on inorganic iodine, unmistakable signs of "escape" began to develop, the basal metabolic rate mounting to +61 in less than a month. Diiodotyrosine was discontinued at that point, the basal metabolic rate thereafter mounting further to +83. Diiodotyrosine was then given preparatory to operation, the basal metabolic rate dropping to +45.

CASE 24.—A Negro woman, aged 38, had been similarly treated with inorganic iodine relatively early in the disease, with a good effect at first for about two months. Signs of "escape" then began to develop. She was admitted to the hospital with a basal metabolic rate of +53 and obviously very toxic. She had not received iodine for two weeks at the time of admission. After a third week without iodine, compound solution of iodine was given for nine days, the basal metabolic rate changing very little (+46). Clinically, she appeared somewhat improved. Diiodotyrosine was then started and continued for twelve days, after which the basal metabolic rate was +48 and there was no obvious improvement in her condition. She was still in a very toxic state at the time a partial hemithyroidectomy was performed and died two days after operation with all the signs and symptoms of severe acute thyrotoxicosis.

CASE 25.—An American housewife, aged 62, presented all the stigmas of exophthalmic goiter of moderate severity with a moderately large gland but with a basal metabolic rate of only +21 on admission to the hospital. She was given sodium iodide for ten days without clinical improvement and the basal metabolic rate was then found to be +28. Diiodotyrosine was administered for ten days, at the end of which time the rate was +32, with no definite clinical improvement.

In confirmation of the earlier reports,[1] our results indicate that administration of diiodotyrosine to patients with hyperthyroidism usually results in clinical remission and a fall in the basal metabolic rate. While the response was often very satisfactory, it was our general clinical impression that remission was not more striking than that noted after compound solution of iodine or sodium iodide. This impression was fortified by the results of a comparison of the fall in basal metabolism after diiodotyrosine in this series with that obtained with compound solution of iodine or sodium iodide in 185 unselected bed patients showing definite clinical and metabolic evidence of hyperthyroidism (table 2). In thirty-five of these cases, the thyroid gland was nodular; in the remainder, diffusely enlarged. Forty-five patients received sodium iodide before operation (usually 0.1 Gm. daily), while the remainder received compound solution of iodine (usually 1 cc. daily), the response to the two medications being essentially the same in this series.[7] The patients are grouped according to the level of the basal metabolic rate as determined not earlier than the third day of hospitalization, before iodine medication was begun. The response indicated was obtained after from seven to fourteen (average ten) days of treatment with iodine, with eighteen exceptions. The average fall in the basal metabolic rate in the several groups corresponds in general with the careful studies reported by clinics as widely separated geographically as Boston,[8] Chicago,[9] Baltimore,[10] Vienna[11] and Breslau.[12]. Comparison of these results with the decrease in the basal metabolic rate following administration of diiodotyrosine (as shown in table 1, and the articles cited in footnote 1) does not warrant the conclusion that the response to diiodotyrosine is more marked than might have been anticipated with compound solution of iodine or sodium iodide.

The resected thyroid glands of our patients prepared with diiodotyrosine were analyzed for total iodine by a slightly modified Kendall method[13] and for thyroxine iodine by the method of Leland and Foster.[14] The results in this series (table 1) fall within the wide range of variation previously observed in a larger group in which compound solution of iodine had been used before operation.[15] This obtains also for the thyroxine iodine per cent of thyroglobulin iodine, as indicated in the accompanying chart. Analysis of 120 thyroid glands of patients with hyperthyroidism, including many severe cases, has not provided us with any instance in which hyperthyroidism was associated with an increased thyroxine iodine percentage of thyroglobulin iodine definitely above the normal maximum.[16] On the contrary, all the available chemical data[17] point to a *decrease* in thyroxine iodine percentage of thyroglobulin iodine in hyperthyroidism. The mean thyroxine iodine percentage of thyroglobulin iodine in thirty-eight hyperthyroid glands containing less than 0.1 per cent of total iodine in the dry gland was found to be 11.4. A similar decrease was also observed in degenerated nontoxic nodular glands.[15] The cause of the decrease in thyroxine iodine percentage of thyroglobulin iodine is not known. It has been suggested[15] that too rapid discharge of thyroid hormone into the circulating fluid in hyperthyroidism, or a deficiency of some essential agent in degenerated nontoxic glands might play a part in the inadequate formation of thyroxine from intermediate



Scatter diagram to show the relationship between increasing thyroglobulin iodine percentage and the ratio of thyroxine iodine to thyroglobulin iodine in seventy-two diffuse and eighteen nodular hyperthyroid glands from patients given inorganic iodine; and twenty-five diffuse and five nodular glands after diiodotyrosine. The major trend is indicated by lines drawn to include the areas containing the majority of points. The solid dots represent patients with toxic diffuse goiters given compound solution of iodine; hollow dots, patients with toxic nodular goiters given compound solution of iodine; plus signs, patients with toxic goiters given diiodotyrosine.

7. Fulton, M. H., and Alt, H. L.: Comparative Effect of Different Iodine Preparations in the Preoperative Treatment of Thyrotoxicosis, New England J. Med. **203:** 327 (Aug. 14) 1930. Lerman, J., and Means, J. H.: Comparison of the Effect of Ethyl Iodide and Potassium Iodide with That of Lugol's Solution, Am. J. M. Sc. **181:** 745 (June) 1931.

8. Means, J. H.; Thompson, W. O., and Thompson, P. K.: On the Nature of the Iodine Reaction in Exophthalmic Goiter, Tr. A. Am. Physicians **43:** 146, 1928.

9. Thompson, W. O., and Means, J. H.: Comparison of Exophthalmic Goiter in Boston and Chicago, J. A. M. A. **99:** 1483 (Oct. 29) 1932.

10. Winkenwerder, W. L., and McEachern, Donald: The Use of Iodine in Preoperative Treatment of Hyperthyroidism, Bull. Johns Hopkins Hosp. **51:** 282 (Nov.) 1932.

11. Schürer-Waldheim, F., and Windholz, F.: Klinische und morphologische Untersuchungen ueber die ante- und postoperative Jodbehandlung bei Morbus Basedowii, Deutsche Ztschr. f. Chir. **207:** 111, 1927.

12. Rahm, H., and Haas, M.: Prä- und postoperative Jodbehandlung beim Morbus Basedow, Beitr. z. klin. Chir. **149:** 365, 1930.

13. Foster, G. L., and Gutman, A. B.: On the Fate of Diiodotyrosine in the Animal Organism, J. Biol. Chem. **87:** 289 (June) 1930.

14. Leland, J. P., and Foster, G. L.: A Method for the Determination of Thyroxine in the Thyroid, J. Biol. Chem. **95:** 165 (Feb.) 1932.

15. Gutman, A. B.; Benedict, E. M.; Baxter, B., and Palmer, W. W.: The Effect of Administration of Iodine on the Total Iodine, Inorganic Iodine, and Thyroxine Content of the Pathological Thyroid Gland, J. Biol. Chem. **97:** 303 (July) 1932; Tr. Am. A. Study Goiter, 1932, p. 31.

16. Leland and Foster.[14] Gutman, Benedict, Baxter and Palmer.[15]

17. Wilson, L. B., and Kendall, E. C.: The Relationship of the Pathological Histology and the Iodine Compounds of the Human Thyroid, Am. J. M. Sc. **151:** 79, 1916. Gutman, Benedict, Baxter and Palmer.[15]

iodine compounds such as diiodotyrosine. But, as pointed out by Wilson and Kendall,[17] these changes in the thyroid gland are probably secondary and do not play a determining causal rôle in the course of hyperthyroidism.

It has been shown that when gram doses of diiodotyrosine are fed to rabbits, some diiodotyrosine is absorbed intact,[18] as indicated by the recovery of diiodotyrosine and 3,5-diiodo-4-hydroxyphenyllactic acid in the urine.[13] When fed in such enormous doses, only about 10 per cent of the total iodine excreted was found to be in inorganic form. It is not known what proportion of diiodotyrosine is broken down when given in therapeutic doses to patients. It is not impossible that, when administered in small quantities, no diiodotyrosine is absorbed as such and the effects observed in hyperthyroidism are due to inorganic iodine split off in the alimentary tract. For this reason, an attempt was made to estimate diiodotyrosine as the free amino-acid in the thyroid glands of our patients given diiodotyrosine. The glands, dried at 70 C. for from twenty-four to forty-eight hours, were extracted with tenth normal sulphuric acid,[15] in which diiodotyrosine is soluble and relatively stable. The extract was then ultrafiltered and the ultrafiltrate examined for inorganic iodine.[13] More than half of the ultrafilterable iodine could be accounted for as iodides, in most instances, but an appreciable fraction gave a silver precipitate which was acid soluble, reacting like diiodotyrosine (table 1). A mean of 94 per cent of ultrafilterable iodine was recovered as iodides from six thyroid glands of patients given compound solution of iodine. This is within the limit of error of recovery in known potassium iodide solutions.

CONCLUSIONS

We are more impressed with the similarities than by the differences between the response of hyperthyroid patients to diiodotyrosine and to other iodine compounds. The effects are indistinguishable as to time of onset of remission, the period required for maximum response, the duration of remission, the exacerbation when medication is discontinued, the response when again administered,[1] the ultimate development of a refractory state, the success of intermittent dosage in mild cases,[1] and the characteristic clinical, metabolic, histologic and chemical changes common to the two. The conclusion that the effects of diiodotyrosine and of inorganic iodine are essentially the same appears justified. It has been suggested [4] that the effects of iodine in hyperthyroidism are due to the influence of diiodotyrosine that is formed. Ignorance of the intermediary iodine metabolism of the thyroid gland makes it impossible to prove or disprove this assumption. Diiodotyrosine has not been conclusively shown to have any physiologic activity that could be regarded as antagonistic to thyroxine. The lowering of the basal metabolic rate of animals fed thyroid gland by added diiodotyrosine was not observed by Kommerell [19] in dogs or in this laboratory in guinea-pigs.[20] Diiodotyrosine does not lower the basal metabolism of normal animals, as might be expected of a substance having an effect antagonistic to thyroxine. One might expect, furthermore, that administration of thyroxine in the form of thyroid gland, which also contains a large proportion of diiodotyrosine, would not produce as great an effect on the metabolism as an equivalent amount of thyroxine in the form of the free amino-acid. That this is not the case is well established. It should be pointed out that the only definite physiologic activity which diiodotyrosine has been shown to possess is the acceleration of metamorphosis in amphibia, in which respect it acts like thyroxine.

SUMMARY

1. Thirty patients with hyperthyroidism were prepared for thyroidectomy by administration of diiodotyrosine. The reports of earlier workers that diiodotyrosine induces clinical remission and a fall in the basal metabolic rate were confirmed.

2. The degree and characteristics of the clinical and metabolic response were essentially similar to those obtained with compound solution of iodine and sodium iodide. The total iodine and thyroxine contents of the resected thyroid glands were found to fall within the range of variation of glands obtained from patients given inorganic iodine.

3. No evidence was obtained to justify the impression that the effect of diiodotyrosine in hyperthyroidism is specifically different from that of other forms of iodine.

620 West One Hundred and Sixty-Eighth Street.

18. Oswald, A.: Ueber den Abbau des Dijodtyrosins im tierschen Organismus, Ztschr. f. physiol. Chem. **65**: 141, 1910. Foster and Gutman.[13]

19. Kommerell, B.: Zur Frage der Wirkung des Dijodtyrosins auf den thyreotoxischen Stoffwechsel, Arch. f. exper. Path. u. Pharmakol. **165**: 169, 1932.

20. The normal oxygen consumption of three guinea-pigs (94.1, 91.7 and 95.0 cc. per square meter per minute) was increased 24, 47.3 and 38.3 per cent by feeding thyroid. After ten days on the same daily dosage of thyroid + 50 mg. of diiodotyrosine, the oxygen consumption remained 38.4, 50.3 and 39.7 per cent, respectively, above the initial value. The determinations were made in a modified Benedict closed circuit apparatus by Dr. J. P. Leland, to whom we are greatly indebted.

DERMATITIS PRODUCED BY COSMETICS (LA GERARDINE)

LESTER HOLLANDER, M.D.
PITTSBURGH

Dermatitis produced by cosmetics through direct contact is becoming a more frequently established and recognized condition, but the specific agent responsible for this eruption has to be ferreted out of an almost endless number of these so-called beautifying preparations.

As the eruption may develop either immediately after the use of a new preparation as a result of specific hypersensitivity or of chemical irritation, or only after a long period of use, as a result of sensibilization, created through frequent and constant use, difficulty arises in finding the cause. A subconscious defensive attitude on the part of the patient when the subject of cosmetics is broached adds further hindrance.

It may be profitable to mention what arouses one's suspicion of a dermatitis produced by contact with cosmetics:

1. Location of the eruption.
2. Sudden appearance.
3. Intense subjective symptoms (burning and itching).
4. Time element.
5. Type of skin eruption.

These points need further elucidation:

1. *Location.*—The area in which the eruption originally began is of the greatest importance and must be carefully elicited. As a general rule, only the exposed surfaces become involved, but in severe cases, through scratching, distant parts may become secondarily affected.

From the Pittsburgh Skin and Cancer Foundation.

Dependent on the location of the commencement of the eruption, the following causative factors may be suspected:

Scalp: Hair tonics and hair dyes. (Usually only chemical irritants contained in hair tonics cause a dermatitis in the scalp, such as tincture of capsicum or of cantharides.)

Forehead: Hair lotions, hair dyes, tissue creams.

Eyelids: Hair tonics, hair dyes, massage creams, eye washes, face powder, nasal sprays.

Nose: Nasal sprays.

Circumoral Area: Tooth powders, tooth pastes, mouth washes, lip rouge.

Face: Face creams, face powder, hair tonics, hair dyes, hair waving preparations, soap, depilatories.

Retro-Auricular Area: Perfume, hair tonics.

Neck: Perfume, hair dyes, hair waving preparations, hair tonics, massage creams (especially lemon creams).

Axillae: Deodorants, depilatories, perfume.

Nipples and Navel: Perfume.

Under the Breasts: Powder, soap.

Nails: Nail paints, manicuring aids.

Groin and Anal Region: Menstrual pads, toilet paper, deodorants hair dyes.

Legs: Depilatories, soaps.

Interdigital Areas and Soles: Dusting (foot) powders.

2. *Sudden Appearance.* — Usually the eruption appears without prodromal symptoms. If it is due to a strong chemical in the preparation, the objective symptoms of redness and swelling occur rapidly; if due to hypersensitivity, the symptoms will usually be much milder.

3. *Intense Subjective Symptoms.*—In most instances the itching and burning are extremely out of proportion to the amount of involvement. Especially is this true of the symptom of itching. There is an intense desire on the part of the patient to rub open the affected areas.

4. *The Time Element.*—Both the time of the appearance and the time of greatest intensity of the symptoms are important. Dermatitis produced by strong chemicals will occur in direct ratio to the application, while the intensity of the eruption in all cases will have a definite periodicity associated with the application of the cosmetic. One must bear in mind that the cosmetic applied to the scalp will cause the symptoms during the night and on arising, because very frequently the condition is spread from the scalp to the more sensitive areas of the face and neck through contact with the bed linen.

When the eruption is due to a perfume in the preparation, sunlight is usually required to bring it out, and therefore both the subjective and the objective symptoms will arise after this secondary exposure. When it is due to a cream, it invariably starts within a half hour after the application. When it is due to a powder (this is usually a sensitivity to orris root, which is frequently a component part of face powder), the time of occurrence is usually after the patient gets warm and, in order to get rid of the perspiration and sebaceous fatty excretion on her face, repowders with a good deal of vigor.

5. The type of skin eruption varies from a simple erythema to a marked excoriation and even loss of epidermal structure. Frequently, however, it is ill defined and bilateral but not symmetrical.

The patient need not be the one using the irritant. Contact dermatitis may arise from husband, wife or any close associate.

The type of eruption produced by the various cosmetics may be summarized in a general way in the following manner:

Creams usually produce a fine vesicular eruption on an inflammatory base, which is pale pink. The more vigorous the massage and the finer the texture of the skin, the more marked is the resultant clinical picture.

Powders and rouge produce an erythema and a slight amount of scaling not unlike an erythematous type of lupus erythematosus.

Tooth cleansing preparations produce a dry scaling hyperemia of the lips and may show slight vesiculation and cracking on the mucous surfaces.

Hair preparations produce an edema and redness of the upper eyelids which soon increases in severity and results in a fissuration of the transverse fold, minute vesicles on the forehead along the hair line and vesicular dermatitis of the ears.

Perfumes produce elongated, red, edematous, plaque-like lesions, brought out or intensified by sunlight; a dark brown persistent pigmentation replaces the reddened patch after a time.

Nail paints and manicuring aids produce a scaling and breaking of the nail plates and occasionally an inflammation of the nail fold.

Deodorants and depilatories produce an indolent folliculitis which sooner or later becomes suppurative and spreads by contiguity.

The art of history taking is nowhere more difficult, because of the patient's elusive and evasive replies. However, one must ascertain the following:

1. The name, make and kind of all the cosmetics used. Specific questions should be asked about powders, rouges, massage creams, vanishing and cleansing creams, skin foods, tonics, washes, hair preparations, wave-setting fluids, lip sticks, eyebrow pencils and the like.
2. The frequency and the time of their use.
3. The onset and duration of the eruption.
4. The time of greatest intensity. The latter I found to be of inestimable value, especially when the periodicity of the eruption's greatest intensity may be ascertained.

Both the direct and the indirect method should be used to prove the specific cosmetic responsible for the eruption. This is accomplished as follows:

First, by skin testing: A small amount of the suspected cosmetic is placed in apposition with the skin of the forearm and kept there with an impervious dressing for from twenty-four to forty-eight hours. Since at times a broken skin surface is necessary to produce the dermatitis, a second patch is applied over a superficially scarified area. As a control, an unaffected individual is used. The test will be considered positive if an erythema or a vesicular erythema appears and persists for twenty-four hours at the site of the patch test. If a cream is suspected, it must be massaged into the area tested. An exacerbation of the original symptoms may frequently result after the patch test has been applied.

Secondly, the elimination of the cosmetic should be followed by the disappearance of the symptoms. When the cosmetic suspected has been used for the hair, it is necessary to have a thorough shampoo. After all the symptoms have cleared, reapplication of the cosmetic gives a recurrence of the symptoms.

Three cases of circumscribed dermatitis came under my observation within the last few months which illustrate some of these points mentioned. All three were

caused by the preparation "La Gerardine," which is used for producing "natural" waves in the hair.

REPORT OF CASES

CASE 1.—Mrs. F. B. I., aged 37, an American housewife, consulted me, March 22, 1933, for an intensely itchy eruption which involved her neck, anteriorly and laterally. The lesions consisted of a number of discrete, pinpoint to pea-sized, ill defined macules and vesicopapules. The latter appeared on an elevated, erythematous base, not unlike a lesion produced by an insect bite. The itching was constant; it was most intense three or four hours after retiring and on awakening. The condition was of five or six weeks' duration.

The sudden onset, the limitation of involvement, the lack of symmetry (though bilateral) and the periodicity of intensity all suggested a contact dermatitis.

Thorough questioning as to cosmetics for the skin and hair, the wearing of new furs or clothes, the recent dry cleaning of these, and contact with plants, vegetable oils, perfumes and the like led nowhere.

A local preparation of calamine was prescribed, which seemed to stop the subjective symptoms, but the lesions persisted.

Three weeks later the nape of the neck became involved also, and the itching of the entire neck became intolerable. This time I insisted that the patient describe in minute detail everything she did in the way of her toilet, including what was done for her at the hair dressers. It was then that the use of a hair waving preparation called "La Gerardine" was mentioned. The disconcerting thing about this was the fact that she had been using the preparation for the last three years. Having had patients who developed sensibilization after prolonged use of a substance before, I instituted the following treatment:

A thorough shampoo of the hair was given. There was an almost instant relief from the itching, and the lesions disappeared in about three days.

Reapplication of "La Gerardine," after a period of a week's freedom, reproduced both the subjective and the objective symptoms; a thorough shampoo again cleared the dermatitis.

CASE 2.—Miss A. W., aged 30, a beautician, consulted me, Feb. 10, 1933, for a small patch of dermatitis over the left zygomatic area and a few ill defined circumscribed areas of intensely itchy plaque-like erythematous lesions on the sides of her neck.

One year previously I treated the patient for a nickel dermatitis of her neck and wrist (she was then wearing eye glasses on a metal chain and a metal encased wristwatch), and I assumed that this was a return of the condition, though the patient insisted that she had not come in contact with any metal.

One-fourth unit of roentgen ray was given, and I asked the patient to refrain from the use of all cosmetics. Though there was some improvement for a time, the condition kept on recurring. After the causative agent in case 1 was determined, I found that this patient, too, was using "La Gerardine" on her hair.

A thorough shampoo, a change of the bed linen and the discontinuation of "La Gerardine" promptly cleared up the skin. Reapplication of this preparation caused a recurrence of the eruption, which again yielded to the treatment.

CASE 3.—Mrs. E. P., aged 29, a housewife, complained of an acute eruption on her face, which had developed six days before examination. There were about eighty millet-sized to pea-sized lesions covering the face and neck anteriorly and laterally. Each lesion appeared as a discrete erythema with minute vesiculation. In most of them the epidermis had scaled off, leaving a somewhat shiny base. The eruption was extremely itchy.

Eight days before after a shampoo of the hair, the patient began to use "La Gerardine" to put a "natural" wave in her hair. Since that day she had been spraying this preparation on her hair with an atomizer, according to the directions on the circular with this preparation.

Shampoo of the hair, change of pillow cases and discontinuation of the use of "La Gerardine" was followed by almost instantaneous clearing of the eruption.

631 Jenkins Building.

FUNDAMENTALS OF ASPHYXIA

YANDELL HENDERSON, PH.D.
NEW HAVEN, CONN.

Asphyxia is the most frequent and the most important of all pathologic processes. This is true because respiration — the exchange of oxygen and carbon dioxide and the production of energy — is the most fundamental process of life. Any disturbance of the circulation, any alteration of the cells of any tissue almost inevitably involves an alteration of the respiratory activity of one or more organs, or of the body as a whole. A large part of all the structural abnormalities that the pathologist studies involve perversions of tissue respiration. This is true, for instance, of cancer cells. There is good evidence, also, that not only such temporary psychic phenomena as unreasonableness in aviators and mountaineers, but even catatonic lethargy and other symptoms of insanity are dependent on impairment of the respiration of the brain.

Evidently asphyxia is something much broader than the acute conditions that are being discussed today. It is not only carbon monoxide poisoning, asphyxia of the new-born, the effects of hemorrhage and anemia, or the state of a patient after prolonged anesthesia; it is the state that develops in one way or another in the majority of all human beings as death from disease approaches. Unless one is burned alive, the tissues of one's body always die of asphyxia.

STAGES OF ASPHYXIA

What then is asphyxia? Primarily it is a state or series of states induced by an oxygen supply short of tissue needs. But deficiency of oxygen is only the initial cause and first stage of asphyxia. Life is not like a candle that on extinction can be immediately relighted. Recovery from asphyxia in an untreated patient is often extremely slow, indicating that certain conditions and processes, far more complex than mere deficiency of oxygen, have to be slowly and with difficulty reversed. If asphyxia of a little less than fatal intensity is prolonged, it may in rare cases render a man permanently an idiot as completely as if his cerebrum had been removed. Tissue degeneration, once started, is not immediately reversed by even the most ample supply of oxygen.

The problem of asphyxia puts before us, then, first and foremost the question: What is the significant element secondary to oxygen deficiency that lack of oxygen induces? What is the critical factor in the second stage of asphyxia? The answer to this question is perhaps one of the most extraordinary that science has ever given. It is simply this: The critical element in the second stage of asphyxia is deficiency of carbon dioxide. Beyond this second stage there are a series of other stages leading to autolysis, fatty degeneration, and necrosis.

THE DISCOVERY OF ACAPNIA

The initial observations that led me to this conception of the second stage of asphyxia were made twenty-five or thirty years ago and were published as studies on acapnia.[1] Acapnia means deficiency of carbon dioxide.

From the Laboratory of Applied Physiology, Yale University.
Read before the Society for the Prevention of Asphyxial Death at the New York Academy of Medicine, New York, May 24, 1933.

1. Henderson, Yandell: Acapnia as a Factor in Shock, Brit. M. J. **2**: 1812, 1906; Fatal Apnea and the Shock Problem, Bull. Johns Hopkins Hosp. **21**: 235 (Aug.) 1910; Acapnia and Shock, Am. J. Physiol. **21**: 126 (Feb.) 1908; **23**: 345 (Feb.) 1909; **24**: 66 (April) 1909; **25**: 310 and 385 (Feb.) 1910; **26**: 260 (June) 1910; **27**: 152 (Nov.) 1910. Henderson, Yandell, and Harvey, S. C.: Ibid **46**: 533 (Aug.) 1918.

Unfortunately, I gave the word an accessory significance: I regarded it as the result of simple overbreathing. I see now that the overbreathing itself is secondary to deficiency of oxygen somewhere in the body. This deficiency induces the liberation of some substance which acts on respiration and thus induces overbreathing. I shall, therefore, in the future give the second stage of asphyxia another name. I shall call it "acarbia." I define acarbia as the asphyxial diminution in the bicarbonates of the blood.

The conception of acapnia, crude as it was, has yet been useful. By it anesthetists were led to use rebreathing. From this practice they have learned to avoid the stage of excitement, overbreathing, and excessive elimination of carbon dioxide. They thus avoid inducing the condition of simple acute acapnia and failure of respiration. Today a competent anesthetist conserves the carbon dioxide store of the body. As a result, very few patients now die from respiratory failure on the operating table, an occurrence once common.

The idea that the carbon dioxide store of the body should be conserved, or sometimes even increased, seemed at first to be opposed to one of the great fundamental discoveries of science. A hundred and forty years ago, Lavoisier discovered that the body consumes oxygen and produces and excretes carbon dioxide. Carbon dioxide was therefore generally classed with other excreta. To administer it to a patient seemed as illogical as to employ urine as a therapeutic agent. Furthermore, measures to keep carbon dioxide in the body were regarded as essentially equivalent to keeping oxygen out. Even today, the dictionaries, including medical dictionaries, define asphyxia not only as deficiency of oxygen, which it is, but also as excess of carbon dioxide, which it is not.

THE ACID-BASE BALANCE OF THE BLOOD, AND SO-CALLED ACIDOSIS

No sooner was this difficulty overcome than a new and greater difficulty arose. Toward the end of the last century the great Swedish scientist Arrhenius introduced into chemistry the idea that salts, acids and alkalis in solution are separated into their component elements and act as ions. From this idea the conception developed that in all solutions the acid and alkaline elements interact to maintain what is now called the hydrogen ion concentration of the solution: the quantity now expressed by the symbol p_H. This conception was introduced into physiology by L. J. Henderson,[2] who showed that in the balance of acids and alkalis in the blood the acid is chiefly carbonic acid and the alkaline factor chiefly bicarbonates. Van Slyke[3] called these bicarbonates the "alkaline reserve." For their measurement he invented the useful modification of the mercury pump that is now in universal use. These were great contributions; but they have also lent support to a misconception of long standing,[4] namely, that all the conditions called "acidosis" involve intoxication by acid.

Intoxication by acid would, of course, partially neutralize the bicarbonates of the blood and thus diminish the so-called alkaline reserve. Accordingly, when it was found that the amount of the bicarbonates in the blood—that is, the amount of carbon dioxide that can be got out of the blood—is diminished, it appeared that theory and observation, laboratory and clinic, were in complete agreement. Nothing could be clearer, more logical or more satisfying than this conception. It is now taught as gospel truth to every medical student. Let any clinician go to any biochemist with a question in regard to the topics discussed in this paper and the biochemist will state this conception as one of the most important and most certain of the principles of his science.[5]

The only trouble is that this inference from physicochemical theory, when put to the test on living men and animals, proves in certain crucial features to be flatly contradicted by facts. I shall mention three such tests.

TESTS FOR ACIDOSIS

First, there is the obvious test consisting in the administration of alkalis to patients with so-called acidosis. When the acid-base equilibrium of the blood was first presented to physiologists and clinicians as a fundamental feature of the living system, it was recognized that, according to this conception, acidosis should be relieved by the administration of alkalis. This therapy has in fact been widely tried.

In diabetic acidosis, before the discovery of insulin, sufficient alkali was often administered to restore the normal bicarbonate content of the blood; yet the patients died. In some conditions the administration of alkali has even proved to be injurious. I tried it on a patient in one of the classic forms of so-called acidosis: that induced by carbon monoxide asphyxia. The effect fell just short of immediate death. I warn against administering alkali to asphyxiated new-born babies, although they also have what is now called acidosis. The facts that I shall give presently make it exceedingly probable that the baby would die.

The second test is one that a number of critics have emphasized on theoretical grounds but have neglected to put to practical test, either experimental or clinical. On the other hand, I have applied this test both experimentally and clinically with results that refute the critics' inferences from theory. According to theory, the principal acid of the blood, in fact the only free acid, is carbonic acid; that is, carbon dioxide in solution. Any condition of what is now called acidosis—the condition that I call acarbia—especially when the normal alkalinity, or p_H, of the blood is also diminished, is therefore interpreted as involving at least a relative excess of carbon dioxide. From this it follows, as critics have pointed out, that the administration of carbon dioxide must "intensify the acidosis." The inference is that "intensification of acidosis" should be distinctly injurious to the patient. The logic is almost perfect. It is only the facts that perversely refuse to correspond.

RESUSCITATION BY INHALATION OF CARBON DIOXIDE

Many years ago, my colleague Dr. H. W. Haggard and I decided that in spite of the prevailing theory we would try out the therapeutic possibilities of carbon dioxide inhalation on two classes of patients: (1) the victims of carbon monoxide asphyxia, and (2) patients who came from the surgical operating room in the deep

2. Henderson, L. J.: Blood, a Study in General Physiology, Yale University Press, 1928.

3. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, Baltimore, Williams & Wilkins Company **1:** pp. 868-1018, 1931.

4. Stadelmann, E.: Ueber die Ursache der pathologische Ammoniakauscheidung beim Diabetes mellitus und dem Coma diabeticum, Arch. f. exper. Path. u. Pharmakol. **17:** 419, 1883.

5. This subject is discussed from every angle in the Transactions of the Association of American Physicians in 1916 by J. Howland, R. T. Woodyatt, C. Frothingham, L. G. Rowntree, L. J. Henderson, E. P. Joslin, C. F. Hoover, D. D. Van Slyke, H. A. Hare, S. J. Meltzer, T. C. Janeway, and Yandell Henderson; also in New York M. J. **104:** 1119, 1916; also in Acidosis and Alkalosis, by Stanley Graham and Noah Morris, published by William Wood and Company, New York, in 1933.

postanesthetic depression that was then common. Both of these classes of patients have very definitely what is now generally called acidosis. Cannon [6] observed it in wounded soldiers during the war. The administration of carbon dioxide to patients in postanesthetic depression met therefore with the objection that the administration of carbon dioxide must "intensify acidosis." [7]

Fortunately, we could also justify the inhalation of carbon dioxide on grounds that others would accept. We avoided discussion of the problem of acidosis lest it stir up controversy and retard the introduction of measures for the saving of life. We used as our argument the fact, demonstrated by the elder Haldane [8] and his co-workers, that carbon dioxide stimulates respiration. We stressed only the fact that increase of breathing hastens the elimination of carbon monoxide, ether and other volatile substances from the blood. We did not stress the fact, which is really much more important, that carbon dioxide inhalation hastens recovery of normal conditions after asphyxia or anesthesia,[9] even when there is no foreign substance like carbon monoxide, anesthetics or other volatile substances to be eliminated.

Today, carbon dioxide, diluted in oxygen or air, is everywhere the accepted therapy for carbon monoxide asphyxia.[10] The rescue crews of practically all American fire and police departments and gas and electric light companies are equipped with inhalators for the administration of carbon dioxide diluted with oxygen. There are more than 3,500 inhalators in use, and it is conservatively estimated that more than 50,000 cases of carbon monoxide poisoning, drowning and other forms of asphyxia are treated by this means annually. Many hundreds of lives have been saved; and as yet there is no evidence whatever in any single case of any such effect as would be involved in an "intensification of acidosis."

As regards the use of carbon dioxide in connection with anesthesia, the cases that have been treated are numbered by hundreds of thousands. The use of carbon dioxide in connection with surgical anesthesia is one of the most widely employed accessories of the modern surgical operating room. I do not mean to assert that carbon dioxide should be administered to every patient; but in many cases it is absolutely of life-saving value. It does far more than merely stimulate breathing. It is the dilatation of the thorax and increase of the vital capacity by better tonus rather than the increase of breathing that overcomes atelectasis.[11] Carbon dioxide is in fact the most widely active hormone, or chemical regulator, in the body.

The observations that Haggard, Coburn and I [12] made on the cases that we studied at the initiation of this use of carbon dioxide showed that, during anesthesia of the badly administered type then common and after surgical operations, there was a very marked decrease of the alkali bicarbonates of the blood. This is the feature that has led others to conclude that such patients suffer from acidosis. What we found was that, under inhalation of carbon dioxide, the normal amount of alkali bicarbonates in the blood is quickly restored. The circulation improves correspondingly and the patient is thus not only freed from excess of ether but largely restored to normality; Porter [13] also observed this on shocked soldiers during the war.

ALLEGED ACIDOSIS IN ASPHYXIA NEONATORUM

One of the most important and now most widely applied uses of carbon dioxide is in the resuscitation of asphyxiated new-born babies.[14] Resuscitation of these cases by means of carbon dioxide diluted in oxygen may fairly be described as a close imitation of nature's own method. It is oxygen that keeps what is called the respiratory center alive and capable of activity. It is the carbon dioxide of the blood that stimulates the center to activity. These are the main facts of respiration in the adult, and they are equally true of the new-born baby. The inhalational method of resuscitating the still-born affords as perfect a demonstration of the physiology of respiration as any that has ever been performed in a laboratory.[14a] There is ample clinical testimony that, in a large proportion of all nonbreathing or poorly breathing infants, natural respiration develops quickly after the lungs are dilated with a sufficient percentage of carbon dioxide mixed with oxygen.

Yet, objection has been raised on the basis of biochemical theory.[15] Investigation has shown that in still-born babies the blood has all the characteristic

6. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, J. A. M. A. **70:** 531 (Feb. 23) 1918.

7. Van Slyke, D. D.; Austin, J. H., and Cullen, G. E.: Effect of Ether Anesthesia on Acid-Base Balance of Blood, J. Biol. Chem. **53:** 277 (Aug.) 1922. Cullen, G. E.; Austin, J. H.; Kornblum, K., and Robinson, H. W.: The Initial Acidosis in Anesthesia, ibid. **56:** 625 (June) 1923. Austin, J. H.; Cullen, G. E.; Gram, H. C., and Robinson, H. W.: The Blood Electrolyte Changes in Ether Acidosis, ibid. **61:** 829 (Oct.) 1924. Collip, J. B.: Effect of Surgical Anesthesia on Reaction of Blood, Brit. J. Exper. Path. **1:** 282 (Dec.) 1920. Leake, C. D.; Leake, E. W., and Koehler, A. E.: The Acidosis of Ether Anesthesia in the Dog, J. Biol. Chem. **56:** 319 (June) 1923. Leake, C. D.: The Effect of Ethylene-Oxygen Anesthesia on the Acid-Base Balance of Blood: A Comparison with Other Anesthetics, J. A. M. A. **83:** 2062 (Dec. 27) 1924. Ronzoni, Ethel; Koechig, Irene, and Eaton, Emily P.: Ether Anesthesia: III. Rôle of Lactic Acid in the Acidosis of Ether Anesthesia, J. Biol. Chem. **61:** 465 (Sept.) 1924. Stehle, R. L., and Bourne, Wesley: Concerning the Mechanism of Acidosis in Anesthesia, ibid. **60:** 17 (May) 1924. Reimann, S. P., Bloom, G. H., and Reimann, H. A.: Administration of Carbon Dioxide After Anesthesia and Operation: The Acid-Base Regulatory Mechanism, J. A. M. A. **76:** 437 (Feb. 12) 1921. Carter, W. S.: The Effect of Ether Anesthesia on the Alkali Reserve, Arch. Int. Med. **26:** 319 (Sept.) 1920.

8. Haldane, J. S.: Respiration, Yale University Press, 1922.

9. Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the CO_2 Capacity of the Blood: I. High Levels of CO_2 and Alkali, J. Biol. Chem. **33:** 333 (Feb.) 1918; II. Low Levels of CO_2 and Alkali Induced by Ether: Their Prevention and Reversal, ibid., page 345; III. The Effects of Excessive Pulmonary Ventilation, ibid., page 355; IV. The Sequence of Trauma, Excessive Breathing, Reduced CO_2 Capacity and Shock, ibid., page 365. Haggard, H. W., and Henderson, Yandell: Hematorespiratory Functions (twelve papers), I. The CO_2 Diagram of the Blood and the Laws of Respiration, ibid. **39:** 163 (Aug.) 1919; III. The Fallacy of Asphyxial Acidosis, ibid. **43:** 3 (Aug.) 1920; IV. Relation of Oxygen Tension and Blood Alkali in Acclimatization to Altitude, ibid. **43:** 15 (Aug.) 1920. Henderson, Yandell: V. Relation of Oxygen Tension and Blood Alkali in Acclimatization to Altitude, ibid. **43:** 29 (Aug.) 1920. Haggard, H. W., and Henderson, Yandell: XII. Respiration and Blood Alkali During Carbon Monoxide Asphyxia, ibid. **47:** 421 (July) 1921. Henderson, Yandell: Physiological Regulation of the Acid-Base Balance of the Blood and Some Related Functions, Physiol. Rev. **5:** 131 (April) 1925; Oxygen and Everest, Nature **129:** 649, 1932.

10. Henderson, Yandell, and Haggard, H. W.: The Elimination of Carbon Monoxide from the Blood After a Dangerous Degree of Asphyxiation, and a Therapy for Accelerating the Elimination, J. Pharmacol. & Exper. Therap. **16:** 11 (Aug.) 1920; The Treatment of Carbon Monoxide Asphyxia by Means of Oxygen Plus CO_2 Inhalation, J. A. M. A. **79:** 1137 (Sept. 30) 1922. Henderson, Yandell: Resuscitation from Carbon Monoxide Asphyxia, from Ether or Alcohol Intoxication and from Respiratory Failure Due to Other Causes, ibid. **83:** 758 (Sept. 6) 1924; The Dangers of Carbon Monoxide Poisoning and Measures to Lessen These Dangers, ibid. **94:** 179 (Jan. 18) 1930.

11. Henderson, Yandell: Acapnia as a Factor in Postoperative Shock, Atelectasis and Pneumonia, J. A. M. A. **95:** 572 (Aug. 23) 1930. Brunn, H., and Brill, S.: Observations on Postoperative Atelectasis: Consideration of Some Factors in Its Etiology, Prevention and Treatment, Ann. Surg. **92:** 801 (Nov.) 1930.

12. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, J. A. M. A. **74:** 783 (March 20) 1920.

13. Porter, W. T.: Shock from Fat Embolism of the Vasomotor Center, Am. J. Physiol. **71:** 277 (Jan.) 1925.

14. Henderson, Yandell: The Initiation of Respiration at Birth, Nature, Aug. 25, 1928; The Prevention and Treatment of Asphyxia in the New-Born, J. A. M. A. **90:** 583 (Feb. 25) 1928; Incomplete Dilatation of the Lungs as a Factor in Neonatal Mortality, ibid. **96:** 495 (Feb. 14) 1931. McIlroy, A. L.: A Method for the Induction of Respiration in the New-Born, Lancet **2:** 373 (Aug. 20) 1927. Wiener, Rudolf: Erfahrungen über die Behandlung der Asphyxie der Neugeborenen sowie der Zustände von schwerer Atemnot bei Neugeborenen und Säuglingen mit Kohlensäuregasgemischen, Arch. f. Kinderh. **95:** 65, 1931. Brown, W. E.: Resuscitation of the New-Born, Canad. M. A. J. **28:** 175 (Feb.) 1933; abstr. J. A. M. A. **100:** 1893 (June 10) 1933. Also numerous unpublished reports collected by the author.

14a. Henderson, Yandell: Respiratory Experiments on Man, J. A. M. A. **62:** 1133 (April 11) 1914.

15. Eastman, N. J.: Foetal Blood Studies: III. The Chemical Nature of Asphyxia Neonatorum and Its Bearing on Certain Practical Problems, Bull. Johns Hopkins Hosp. **50:** 39 (Jan.) 1932.

features of so-called acidosis. The bicarbonates are low; the p_H is shifted in the acid direction, and there is a considerable increase of lactic acid. This is exactly what should have been expected. On the basis of these facts, the inference has been drawn that "the use of carbon dioxide as a resuscitating agent in asphyxia neonatorum is not only superfluous but may even be harmful in that it tends to aggravate an already existing acidosis." This theoretical objection to the treatment is not supported by any clinical test. It is not denied that the inhalation of carbon dioxide in proper dilution makes the baby breathe.

I have not investigated the blood changes in asphyxia neonatorum, and no one has investigated the return of normality in the blood in these cases under the inhalational treatment. I have merely collected and presented the evidence, which seems to me decisive, that asphyxia neonatorum is in all essential features identical with the other forms of asphyxia that I have studied intensively for more than twenty years. In all these forms of asphyxia, the administration of carbon dioxide is as important for remedial purposes as is oxygen itself. In fact, in many forms of asphyxia it is probable that carbon dioxide diluted with air is more effective than oxygen without carbon dioxide and almost as effective as carbon dioxide mixed with oxygen.

I shall return to the subject of asphyxia of the newborn a little later on. I want first to report the third test, which shows that so-called acidosis, at least when it results from lack of oxygen, is not acid poisoning.

ACIDOSIS WITHOUT ACID

In my laboratory during the past few years we have carried out experiments on asphyxia [16] which show that inferences drawn from physical chemistry and applied directly to the problems of life and disease without adequate tests on living creatures may lead one far from the truth. Physiology and biochemistry have thus gone far astray in regard to the acid-base equilibrium of the blood and have led clinicians after them.

In our experiments, dogs were subjected to a progressively diminishing supply of oxygen until asphyxia and death resulted. Overbreathing occurred under these conditions in all cases. The carbon dioxide content of the blood was thus diminished and a progressive compensatory acarbia developed; that is, the content of bicarbonates in the blood diminished. Along with these developments, the present conception would have led one to expect a progressive increase in the amount of lactic acid in the blood, beginning even with the first slight decrease in the oxygen supply. But in fact in no case was there any increase of lactic acid in the blood until the oxygen had fallen to an asphyxial level and the animal was approaching death. Even then, the formation of lactic acid is best explained not as a form of intoxication but as a last desperate attempt of the living system to protect itself. It certainly is not a condition that can properly be defined as acid intoxication; for animals dying of asphyxia live longer if the atmosphere contains carbon dioxide.

We have carried proof still further.[17] There is now a compound, monoiodoacetic acid, which has the extraordinary property of depriving the tissues of the powers to produce lactic acid. We have first administered this drug and have then asphyxiated the animals. As a result, all the signs of so-called acidosis, particularly the acarbia, developed exactly as in undrugged animals; but without the formation of any lactic acid whatever.

THE H-ION CONCENTRATION OF THE BLOOD

From current theory it is often inferred that the balance of acids and bases in the body is determined merely by the relative amounts of these elements in the diet. Similarly, any alteration of the normal faint alkalinity of the blood is now often assumed to be due to the addition of alkali or acid to the blood. This would be true of nearly every other solution with which a chemist deals. But the living body manages otherwise; it regulates itself. I am not now speaking of the absolute amount of bicarbonate in the blood, but of the H-ion concentration, or p_H; that is, the balance between bicarbonate and carbonic acid. When that balance is altered from the normal, the cause is really physiologic and not merely chemical. It is rarely due to abnormal nutrition or metabolism. It is generally due to an alteration of respiration because of an increase or decrease of the sensitivity of the respiratory center.

Perhaps the body is merely a chemical machine; but it rarely carries out its processes in the simple ways that chemists expect.

Even a slight depression of respiration increases the amount of carbon dioxide retained in the body and alters the blood in the direction of acidity. A slight increase of the sensitivity of the center increases the elimination of carbon dioxide and renders the blood more alkaline. From the standpoint of physical chemistry, an increase of H-ions (low p_H) means, of course, a relative excess of acid. But the acid that is in excess is merely carbonic acid; that is, carbon dioxide. What an alteration of the p_H of the blood really tells us is not whether the balance of acids and alkalis in the body is abnormal; it tells us rather that the sensitivity of the respiratory center is abnormally high or low. Alkalosis and acidosis, in the sense of high or low p_H, express disturbance of respiration. Only slight excess or decrease of breathing is needed to raise or lower the p_H greatly; and the excess or decrease depends on the sensitivity of the center. The p_H of the blood is really an index of the state of the respiratory center.

During the development of asphyxia, first an alkaline and then an acid shift occurs in the blood. Under slight oxygen deficiency in the first stage of asphyxia, the increased respiration overventilates the blood. The loss of carbonic acid leaves the blood relatively alkaline, and a compensatory decrease of bicarbonates occurs. Anoxemia thus leads to acapnia, and acapnia to acarbia. Later, under extreme anoxia, respiration is depressed; there is a relative excess of carbonic acid, and the blood is shifted in the acid direction.

The simplest explanation of these occurrences is that the supply of oxygen is the principal factor controlling the sensitivity of the respiratory center. A slight deficiency of oxygen causes the appearance in the blood of some substance that increases the sensitivity. Extreme deficiency, on the contrary, diminishes the sensitivity, so that an abnormally strong stimulus is required to excite activity. But neither oxygen nor oxygen deficiency, slight or intense, ever acts as a stimulus to the center. The stimulus is afforded by carbon dioxide acting through the p_H of the blood. The amount required depends on the sensitivity at the time. This conception applies to all forms of asphyxia, including the victims of drowning and still-born babies. They do not breathe in spite of a more than normal pressure of carbon

16. Henderson, Yandell, and Radloff, E. M.: The Chemical Control of Breathing, as Shown in the Acid Base Balance of the Blood, Under Progressive Decrease of Oxygen, Am. J. Physiol. **101**: 647 (Sept.) 1932.
17. Henderson, Yandell, and Greenberg, L. A.: To be published.

dioxide and a very low p_H. The reason is that the sensitivity of the respiratory center has been depressed by anoxia. A much stronger stimulus than normal is required: it may be 7 per cent of carbon dioxide or 10 or 15 per cent. I know of one baby that at first responded to nothing less than 20 per cent and was thus resuscitated. Once respiration is started, and oxygen is thus supplied, the sensitivity of the respiratory center is gradually restored. As the sensitivity returns, less and less stimulus is needed, until finally the baby, or the victim of drowning or of carbon monoxide, again breathes with no more than the normal stimulus of 5 per cent of carbon dioxide in the air of the lungs.

SIMILARITIES AND DIFFERENCES BETWEEN ACIDOSIS AND ACARBIA

The most striking example of real acid poisoning is afforded by the experiments of J. B. S. Haldane [18] on himself. He swallowed enough ammonium chloride to induce a true acidosis. The ammonium was converted into urea; and the hydrochloric acid that remained displaced carbon dioxide from the bicarbonates of the blood and diminished their amount. Breathlessness even on slight exertion and other symptoms of low blood alkali developed.

What appeared to be the same condition was induced in J. S. Haldane (father of J. B. S.) and myself when we spent five weeks together on top of Pike's Peak [19] in the summer of 1911. In full acclimatization to such altitudes the bicarbonates of the blood are diminished and there is breathlessness on exertion. In these and other superficial features, the conditions defined by the Haldanes, father and son, were alike. But, fundamentally, these conditions were entirely different. In the one case a considerable part of the alkalis of the blood had been neutralized by acid. In the other, no appreciable amount of alkali had been lost; it was merely out of use. It was occult but ready to return to use whenever the conditions, particularly the pressures of oxygen and carbon dioxide, recalled it on our return to sea level.

In support of this distinction there are experiments that Haggard and I performed on dogs.[9] We injected dilute hydrochloric acid into a vein until the blood alkali was diminished and respiration was increased: effects superficially like those induced by asphyxia. We then administered carbon dioxide both to such acidotic animals and to those which we had subjected to asphyxia. The former were unable to tolerate such treatment; the latter were quickly restored to health by it. It is the recall of the normal amount of alkali to the blood by inhalation of carbon dioxide and the accompanying functional recovery that constitute the chief benefit of inhalational therapy in asphyxia and related conditions. The increase of breathing is merely an accessory benefit.

The control of the amount of alkali in use in the circulating fluid of the body by the pressure and amount of carbon dioxide in solution appears to be one of the fundamental biologic reactions in all living things. It is now found by Thornton [20] to occur in plants essentially as I have found it in animals and men. Exposure of plants to atmospheres containing increasing amounts of carbon dioxide causes the juices to become correspondingly not more acid but more alkaline. The p_H rises and the alkalis are increased. That this reaction is biologic is shown by the fact that the presence of oxygen is also essential; in the absence of oxygen the p_H is lowered under merely chemical forces. Perhaps the study of plants will contribute to a fuller understanding of this reaction so vital to the health of man.

The importance of the normal relation of oxygen, carbon dioxide and blood alkali is most significantly illustrated by mountain sickness and acclimatization to altitude. Under diminished pressure of oxygen, respiration generally increases rather slowly. The carbon dioxide and alkali of the blood are for a time out of their normal relation to oxygen, and mountain sickness occurs. When acclimatization is established and health returns, it is found that the carbon dioxide and alkali have been diminished to nearly the same percentage of their sea level value as is the oxygen pressure in the lungs. The conditions in mountain sickness are essentially like those of a man recovering from alcoholic intoxication; which is also a condition misinterpreted as acidosis.[21] It is probable that all the conditions now called acidosis, which arise from asphyxia, general or local, or those which are related to asphyxia, such as anesthesia and crushing injuries, are in reality not acid poisoning but acarbia.

THE CLINICAL USE OF CARBON DIOXIDE

There is not space to deal here with the details of the technic of inhalational therapy. But it is important, at least, to point out that carbon dioxide may be administered according to two distinct plans: In one, a mixture of a certain percentage of carbon dioxide (formerly 5, now generally 7 per cent) in oxygen is used, and every patient breathes exactly this percentage regardless of his special condition and needs. In the other plan, a mixture of from 20 to 30 per cent of carbon dioxide in oxygen, or even pure carbon dioxide, is used. It is administered through an open mask so that air is inhaled and mixed with it. The amount of carbon dioxide is adjusted to the special requirements of the particular patient.

The first of these methods is suitable for the use of laymen, such as the members of the rescue crews of city gas companies, and the police and fire departments. It is vitally important that the victims of carbon monoxide asphyxia shall be treated at the earliest possible moment and generally before a physician arrives.

The second method is generally preferable in hospitals, particularly in connection with anesthesia. It is also very much cheaper. For most of the new-born babies that do not breathe spontaneously, or breathe poorly, mixtures of from 7 to 10 per cent of carbon dioxide in oxygen are sufficient. But in extreme cases, higher percentages of carbon dioxide are required and should be administered by an anesthetist accustomed to using apparatus that will supply controlled percentages. In such cases and in the prevention of postoperative pulmonary complications in adults, the amount of carbon dioxide should be adjusted according to the reactions of the patient. It is not enough, as some physicians, surgeons and even clinical investigators have done, to say to a nurse, "Give the patient carbon dioxide," without further specific directions or supervision.

18. Haldane, J. B. S.: Experiments on the Regulation of the Blood's Alkalinity, J. Physiol. **55**: 265 (Aug.) 1921.

19. Douglas, C. G.; Haldane, J. S.; Henderson, Yandell, and Schneider, E. C.: Physiological Observations Made on Pike's Peak, Colorado, with Special Reference to Adaptation to Low Barometric Pressures, Phil. Tr. Roy. Soc. London, Series B, **203**: 185-318, 1912.

20. Thornton, N. C.: Carbon Dioxide Storage: IV. The Influence of Carbon Dioxide on the Acidity of Fruits and Vegetables, abstr. Am. J. Botany **19**: 843 (Dec.) 1932. Full paper to be published in Contributions of Boyce Thompson Institute for Plant Research, Inc., Yonkers, N. Y., in September, 1933.

21. Himwich, H. E.; Nahum, L. H.; Rakieten, Nathan; Fazikas, J. F.; Du Bois, Delafield, and Gildea, E. F.: The Metabolism of Alcohol, J. A. M. A. **100**: 651 (March 4) 1933.

CONCLUSIONS

One of the fundamental conditions of health is the balance maintained by respiration between the pressure of oxygen and the amount of carbon dioxide in the body. Oxygen deficiency is the initial cause and first stage of asphyxia, out of which develops the second stage characterized by carbon dioxide deficiency and a compensatory decrease of the bicarbonates of the blood without considerable loss of alkali from the body.

The therapy that nature itself indicates to combat asphyxia and related conditions is therefore not only the restoration of an ample supply of oxygen but also the restoration of the normal amount of carbon dioxide. Carbon dioxide, then, recalls the normal amount of alkali into use and, with the return of the normal relations of oxygen, carbon dioxide, and blood alkali, the chief elements in the living system, the circulation, respiration, muscle tonus and mind, again become normal.

The facts that the clinical use of carbon dioxide has established force this alternative: either acidosis is a matter of small importance and intensification of acidosis does a patient no harm whatever, or many of the conditions now called "acidosis" are etiologically not acid poisoning.

4 Hillhouse Avenue.

HORMONE DIAGNOSIS OF VIABILITY OF PREGNANCY

FRANK SPIELMAN, M.D.
MORRIS A. GOLDBERGER, M.D.
AND
ROBERT T. FRANK, M.D.
NEW YORK

The clinical diagnosis of viability of a pregnancy, especially in the early months, is usually difficult. Both the Aschheim-Zondek [1] and the Friedman [2] pregnancy tests may be of considerable help in determining life or death of the fetus. As Wilson and Corner,[3] Wladika [4] and Spielman [5] have demonstrated, these two reactions depend on the presence or absence of viable chorionic villi. With the complete death of the chorionic tissue, the tests become negative. The prepituitary hormone is the substance which here plays the important rôle.

Besides the prepituitary, the female sex hormone is also considerably increased in pregnancy from the second month on. As early as 1926, we [6] called attention to the importance of female sex hormone studies in pathologic pregnancy. In order to determine a possible interrelationship between life or death of a fetus and both of these hormones, studies of the hormones were instituted in cases in which missed abortion was suspected or expected.[7] An exceptional opportunity to study these cases was afforded by the fact that the method of choice in therapeutic abortion at the Mount Sinai Hospital, when indications are absolute and permanent, is radiotherapy. Two classes of cases were studied: first, those in which irradiation had been done and, second, those in which missed abortion was suspected on clinical grounds.

TECHNIC

The female sex hormone studies were made on the blood by the Frank-Goldberger method,[6] 40 cc. being used for each determination, at intervals usually varying from one week to one month after irradiation was performed. Simultaneously, the Aschheim-Zondek or Friedman test was carried out on the urine. In the majority of cases, the Friedman test, which has superseded the Aschheim-Zondek reaction in our laboratories, was employed. The reaction obtained by the two tests in each case was compared with special reference to the period at which it became negative, indicating disappearance of the hormones. Subsequent expulsion of the fetus or continued viability clinically or by roentgen examination served as a check on the reliability of the results.

RESULTS

The total number of cases studied comprised thirty-three, of which twenty-three represented x-ray abortions and ten, other conditions. The tables show the essential features, both clinical and laboratory.

X-Ray Abortions.—Of the twenty-three x-ray abortions (table 1), in eleven the female sex hormone test became negative at periods varying from seven to twenty-nine days following irradiation, in one after forty-nine days, and in another after seventy-seven days. In the latter two it is to be noted that in the one no determination was made for thirty days, and in the other the negative result obtained after seventy-seven days was the only test performed. All of these patients passed dead fetuses spontaneously. Of the other ten x-ray abortions, the female sex hormone test was negative in five, either at the time roentgen treatment was instituted or immediately afterward. All these patients also aborted dead fetuses spontaneously. The remaining five cases in this group were positive. Four of the patients subsequently showed live growing fetuses necessitating operative removal, and the fifth patient, who later passed a dead fetus, showed first a strongly positive and later a weakly positive reaction.

The pregnancy test in these twenty-three cases varied considerably. Ten either were negative at the time of the first examination or became negative later; nine remained positive even on repeated examination, and in four cases the test was not done. It is to be noted here that, of the ten "positives" which subsequently became "negatives," in six the negative reaction occurred at a much later date than the "negatives" obtained by the female sex hormone test. Of the nine cases that remained positive, six showed the reaction a short time before abortion took place. In one case (P. K.) a blood anterior pituitary hormone determination by a method described by us [8] showed a positive result.

Other Cases.—There were ten cases studied which were not x-ray abortions (table 2). The results obtained here have shed considerable light on the hormonal processes involved. In eight of the ten, missed abortion

---

From the Gynecological Service and the Division of Laboratories of the Mount Sinai Hospital.

1. Zondek, Bernhard, and Aschheim, Selmar: Schwangerschaftsreaktion aus dem Harn, Klin. Wchnschr. **7**: 8 (Jan. 1) 1928.
2. Friedman, M. H., and Lapham, M. E.: A Simple Laboratory Procedure for the Diagnosis of Early Pregnancies, Am. J. Obst. & Gynec. **21**: 405 (March) 1931.
3. Wilson, K. M., and Corner, G. W.: Results of the Rabbit Orientation Test in the Diagnosis of Pregnancy, Am. J. Obst. & Gynec. **22**: 514 (Oct.) 1931.
4. Wladika, Walter: Die Aschheim-Zondeksche Schwangerschaftreaktion bei pathologischer Schwangerschaft, Zentralbl. f. Gynäk. **55**: 143 (Jan.) 1931.
5. Spielman, Frank: The Friedman Pregnancy Test, to be published.
6. Frank, R. T.: The Female Sex Hormone, Springfield, Ill., Charles C. Thomas, 1928.
7. Because of the similarity of the intra-uterine processes occurring in cases in which irradiation has been done to produce abortion and in those of spontaneous missed abortion, the two are here considered as a single entity.
8. Frank, R. T.; Goldberger, M. A., and Spielman, Frank: A Method for Demonstrating Prepituitary Maturity Hormone in the Blood of Nonpregnant Women, Proc. Soc. Exper. Biol. & Med. **28**: 999 (June) 1931.

was suspected. The other two were cases in which the placentas were retained, one after delivery and the other at four months. In five cases the female sex hormone test gave a negative reaction. Of these, four were missed abortions as evidenced by the passage of dead fetuses subsequently in two, the examination of the curettings in another, and, in the fourth case, the removal of a dead abdominal pregnancy at operation. The fifth "negative" turned out at laparotomy to be an old ectopic pregnancy. There were five "positives" and, of these, one patient went on to term, two subsequently passed live fetuses, and the last two "positives" occurred in the cases of retained placenta.

The urine pregnancy test was performed in only five of the ten cases in this group. Most of the others antedated the advent of reliable urine pregnancy tests. There were four "positives" and one "negative." The "positives" occurred in one patient (L. G.) who was allowed to go to term, two patients who later showed dead fetuses (R. S. and J. S.), and the last occurred in one of the cases of retained placenta. The one "negative" was in a case of proved missed abortion.

TABLE 1.—*X-Ray Abortions*

Name	Last Menstrual Period	Diagnosis	Size of Uterus	X-Ray Date	Female Sex Hormone	Aschheim-Zondek	Aborted	Summary
J. J.	8/ 9/29	Preg. +; mitral stenosis	12 weeks	12/ 4/29	12/ 5/29—Pos. 12/18/29—Pos. 12/29/29—Neg.	12/ 5/29—Pos. 12/18/29—Pos. 12/24/29—Pos. 12/29/29—Neg.	1/ 7/30	F. S. H. pos. one day after x-ray treatment; neg. 14 days after x-ray; A.-Z. pos. 20 days after x-ray; aborted 34 days after x-ray
P. G.	9/17/29	Preg. +; mitral and aortic disease	12 weeks	1/ 3/30	1/ 3/30—Neg. 2/ 4/30—Neg. 2/11/30—Neg.	1/ 9/30—Pos. 2/ 4/30—Pos. 2/11/30—Neg.	2/22/30	F. S. H. neg. at time of x-ray; A.-Z. pos. 32 days after x-ray, and neg. 11 days before fetus was passed
I. H.	11/ 7/29	Preg. +; heart disease	8 weeks	1/ 8/30	1/18/30—Pos. 2/ 3/30—Neg.	1/ 9/30—Pos. 2/ 3/30—Neg.	2/ 8/30	F. S. H. pos. 10 days after x-ray; F. S. H. and A.-Z. neg. 24 days after x-ray; aborted 39 days after x-ray
H. A.	8/28/32	Preg. +; gastric ulcer	10 weeks	11/ 8/32	12/ 5/32—Neg.	10/17/32—Pos. 11/18/32—Pos. 12/ 1/32—Pos. 12/12/32—Pos.	12/17/32	F. S. H. neg. 27 days after x-ray; A.-Z. remained pos. until 5 days before abortion; aborted 39 days after x-ray
M. R.	10/28/32	Preg. +; asthma	2 months	12/29/32	1/ 9/32—Neg. 1/25/32—Neg.	1/ 9/32—Pos. 1/25/32—Pos.	2/24/33 Does not feel life	Blood F. S. H. neg. 10 days after x-ray; A.-Z. pos. 27 days after x-ray
L. C.	9/ 2/32	Preg. +; heart disease	8 weeks	11/ 7/32	11/ 7/32—Neg.	11/ 7/32—Pos. 12/ 9/32—Pos.	12/20/32	A.-Z. pos. 32 days after x-ray; aborted 43 days after x-ray
B. G.	1/14/31	Preg. +; gastric ulcer	8-10 weeks	3/ 4/31	4/24/31—Pos.	4/25/31—Pos.	5/27/31	X-ray ineffectual; blood F. S. H. and A.-Z. pos. 51 days after x-ray; abortion induced
E. G.	8/ 2/31	Preg. +; hyperthyroidism	10 weeks	11/ 3/31	11/13/31—Neg. 11/20/31—Neg.	11/13/31—Pos. 11/20/31—Pos.	11/25/31	F. S. H. neg. 10 days after x-ray; A.-Z. pos. 17 days after x-ray, 5 days before abortion; aborted 22 days after x-ray
R. F.	9/ 8/31	Preg. +; nephritis	10 weeks	11/28/31	11/20/31—Pos. 11/28/31—Neg.	11/14/31—Pos. 11/30/31—Neg.	12/ 2/31	F. S. H. pos. 8 days before x-ray and neg. on day x-ray was started; A.-Z. neg on 2d day of treatment; aborted 2 days after x-ray; fetus was dead before x-ray was started
A. S.	2/ 8/28	Preg. +; heart disease	5 months	7/ 8/28	9/ 1/28—Pos.	Not done	Bagged and delivered of a live fetus	F. S. H. pos. at 6½ mos.; x-ray ineffectual
J. C.	11/10/31	Preg. +; pulmonary tuberculosis	3½ months	2/27/32	2/29/32—Pos. 3/26/32—Neg. 4/ 1/32—Neg.	2/29/32—Pos. 3/ 7/32—Pos. 3/18/32—Pos. 4/ 1/32—Neg.	4/ 5/32	F. S. H. neg. for 2 days after x-ray; A.-Z. pos. 18 days after x-ray; aborted 37 days after x-ray
R. Z.	3/20/32	Preg. +; heart disease	3½ months	7/ 1/32	7/15/32—Neg. 8/15/32—Neg. 8/19/32—Neg.	7/15/32—Pos. 8/10/32—Neg. 8/18/32—Neg.	8/29/32	F. S. H. neg. 14 days after x-ray; A.-Z. pos. 14 days after x-ray; aborted 59 days after x-ray
S. A.	5/27/32	Preg. +; heart disease	8 weeks	7/ 6/32	7/15/32—Neg.	7/ 1/32—Pos. 7/15/32—Pos.	7/29/32	F. S. H. 9 days after x-ray; A.-Z. pos. 9 days after x-ray; aborted 23 days after x-ray
L. G.	3/ 4/32	Preg. +; cardiac	10 weeks	5/26/32	6/ 7/32—Pos. 6/22/32—Slight pos.	6/25/32—Pos. 6/ 7/32—Pos. 6/22/32—Pos.	7/ 3/32	F. S. H. slightly pos. 27 days after x-ray; A.-Z. strongly pos. 27 days after x-ray; aborted 38 days after x-ray
A. F.	8/ 2/30	Preg. +; congenital syphilis	6 weeks	9/30/30	12/16/30—Neg.	12/16/30—Neg.	12/27/30	Aborted dead fetus 89 days after x-ray
A. H.	6/28/30	Preg. +; mitral disease	4½ months	9/10/30	1/16/31—Pos.	.....	1/ 8/31	Bougie was inserted and aborted 6 months live fetus; x-ray picture showed 6 months live fetus
L. K.	5/24/29	Preg. +; mitral disease	4½ months	10/ 3/29	10/28/29—Neg.	10/28/29—Pos. 11/ 5/29—Neg.	11/ 9/29	F. S. H. neg. 25 days after x-ray; A.-Z. pos. 25 days after x-ray and became neg. 33 days after x-ray, 2 days before induced abortion
V. I.	10/17/28	Preg. +; mitral disease	3 months	1/ 6/29	12/27/28—Pos. 1/ 7/29—Neg. 1/14/29—Neg. 1/22/29—Neg.	.....	2/17/29	F. S. H. pos. 10 days before x-ray and neg. 1 day after x-ray; aborted dead fetus 42 days after x-ray
L. P.	9/ 9/32	Preg. +; asthma	4½ months	1/10/33	1/17/33—Neg. 2/10/33—Neg.	1/17/33—Pos. 2/10/33—Pos. 3/15/33—Neg.	4/17/33 4¼ mos. fetus	4½ mos. gravid; fetus dead; F. S. H. neg. 1 week after x-ray; preg. neg. 2 mos. after x-ray
P. K.	9/10/32	Preg. +; psychosis	8 weeks	11/ 8/32	11/ 7/32—Neg. 11/15/32—Neg.	Blood anterior pituitary reaction II	1/ 1/32	Blood F. S. H. neg.; blood anterior pituitary reaction pos.; passed dead fetus
R. B.	9/14/32	Preg. +; pulmonary tuberculosis	10 weeks	12/ 6/32	12/19/32—Neg.	12/ 9/32—Pos. 12/19/32—Pos.	12/27/32	Blood F. S. H. neg. 13 days after x-ray; preg. test remained pos.; aborted 3 weeks after x-ray
N. G.	10/24/32	Preg. +; cardiac disease	3 months	1/10/33	2/ 2/33—Pos. 3/ 1/33—Neg.	2/ 2/33—Pos. 2/16/33—Pos. 3/ 2/33—Neg.	3/ 9/33	Blood F. S. H. and urine preg. test became neg. 50 days after x-ray
R. R.	11/ 1/25	Preg. +; spinal cord tumor	5½ months	2/18/26	4/19/26—Pos.	Not done	4/20/26 live fetus	X-ray ineffectual; abortion induced

COMMENT

These results may be summarized as follows: The female sex hormone test was performed in thirty-one

cases in which missed abortion was suspected or expected, and in two cases of retained placenta. A negative reaction was obtained when the fetus was dead (twenty-three cases), and a positive reaction when the fetus was alive (eight cases). The five "negatives" seen at the time of, or immediately after, roentgen treatment to induce abortion must be interpreted as indicating that the fetuses were dead at the time of irradiation, an assumption not at all illogical when the fact that there were present serious medical conditions which indicated induction of abortion is taken into consideration. The conclusion to be reached is obvious: the female sex hormone blood determination may be used as an early and reliable clinical indicator of whether the fetus is alive or dead.

The summarized results of the pregnancy tests show that repeated examinations were performed in twenty-four cases. Eleven of these were or became negative when the female sex hormone test also was negative, but as has been already mentioned, in the majority, a negative pregnancy reaction was obtained at a much later date. In ten cases, positive urine pregnancy reactions persisted when the female sex hormone determinations were negative. In all of these, dead fetuses were subsequently found. Three cases showing positive pregnancy tests checked with similar positive female sex hormone tests. All of these showed live fetuses. It is to be emphasized that never was a negative urine pregnancy reaction obtained when the fetus was alive, but on the other hand in about 50 per cent of cases positive reactions were present in spite of the death of the fetus. The conclusion to be reached is that when a dead fetus is suspected the pregnancy test is of great value in cases that show a negative response, but a positive reaction is of no value since it may mean either a live or a dead fetus. As can be seen, the pregnancy test is not nearly as sensitive an indicator of the presence or absence of a dead fetus as the female sex hormone blood determination.

The modus operandi in both reactions is of considerable interest. The rapid disappearance of the female sex hormone and, to a lesser extent, of the prepituitary-like hormone in cases of missed abortion draws attention to the production center of these two hormones, the placenta. In two of the patients studied (A. L. and L. F.), placentas were retained. In both, the female sex hormone tests were positive and subsequently the structures passed were found to be in a fresh state and recently separated from the uterine wall. The explanation for the rapid disappearance of the female sex hormone, as compared to the prepituitary in missed abortion, apparently lies in the fact that the increase of the former both in the placenta and in the blood in pregnancy is not nearly as great as the increase of the latter. Consequently, injury to the placenta results in rapid diminution of the quantity of female sex hormone to a nondemonstrable level. The prepituitary-like hormone, however, present in much greater quantities, takes much longer to disappear. Also, the presence of viable chorionic villi, as has been demonstrated,[9] supplies sufficient hormone, in spite of fetal death, to give persistently positive tests.

TABLE 2.—*Other Cases*

Name	Last Menstrual Period	Diagnosis	Size of Uterus	Female Sex Hormone	Pregnancy Test	Aborted	Summary
R. S.	5/28/30	Toxemia of pregnancy	7 months; no fetal heart heard	1/20/31—Neg.	1/20/31	Dead fetus	Toxemia with 7 mos. gravidity; F. S. H. neg.; preg. test pos.; passed dead fetus spontaneously
M. R.	9/18/27	Inevitable miscarriage	5 months	12/17/27—Pos.	Not done	12/18/27	Passed live fetus
E. R.	.....	Ectopic pregnancy	.....	3/ 9/27—Neg.	Not done	Ectopic (old), at operation	Ectopic preg.; microscopically old villi seen; F. S. H. neg.
I. N.	3/12/26	Missed abortion	3 months	11/10/26—Neg.	Not done	12/10/26	Uterus remained 3 mos. in size after 7 mos. amenorrhea; passed dead 3 mos. fetus; F. S. H. neg.
A. B.	7/17/30	Missed abortion	10 weeks	3/ 3/31—Neg.	3/3/31—Neg.	3/9/31 curetted	Uterus remained 3 mos. in size after 8 mos. amenorrhea; F. S. H. and preg. tests neg.; on curettage old preg. found
B. B.	8/ 6/30	Threatened abortion	3½ months	12/18/30—Pos.	Not done	12/29/30	F. S. H. pos.; passed live fetus
J. S.	4/ 7/29	Abdominal pregnancy	5 months' fetus by x-ray	9/23/29—Neg.	9/23/29—Pos.	10/14/29 operated	Dead abdominal preg.; F. S. H. pos.; urine preg. test negative
A. L.	7/27/26	Retained placenta	Term	5/26/27—Pos.	Not done	5/27/27 placenta passed	F. S. H. pos.; retained placenta, fresh when passed 1 day after test
L. F.	.....	Retained placenta	4 months	3/26/21—Pos.	3/26/31—Pos.	3/27/31	Retained placenta at 4 mos.; passed fresh placenta 1 day after test was done
L. G.	6/15/32	Preg. +; fibroids	5 months	11/18/32—Pos.	11/18/32—Pos.	Went on to term	Seen in follow-up, 12/7/32; felt life; uterus corresponds to 6 mos.; F. S. H. and A.-Z. pos.; patient went to term

SUMMARY AND CONCLUSIONS

1. Thirty-three pregnancy cases in which missed abortion was suspected or expected were studied from the hormonal aspect in order to determine the relationship between the female sex hormone of the blood and the prepituitary hormone of the urine on the one hand, and fetal life or death on the other.

2. The Frank-Goldberger method was used in the blood studies, and either the Aschheim-Zondek or the Friedman test in the urine studies.

3. A negative female sex hormone reaction was obtained when the fetus was dead (twenty-three cases) and a positive reaction when the fetus was alive (eight cases). The results here were 100 per cent correct.

4. A negative pregnancy reaction was obtained when the fetus was dead in eleven cases, and ten cases gave positive reactions in spite of dead fetuses (approximately 50 per cent correct).

5. The female sex hormone blood determination has proved itself in our small series an absolute indicator of whether a fetus is alive or dead. The urine pregnancy test is of value only when the reaction is negative.

6. The presence or absence of the hormones depends on the degree of involution of the placenta and its attachment to the uterine wall.

145 West Eighty-Sixth Street—10 East Eighty-Fifth Street.

9. Wilson and Corner.[3] Wladika.[4] Spielman.[5]

METHYLENE BLUE SOLUTIONS IN POTASSIUM CYANIDE POISONING

REPORT ON CASES 2 AND 3

J. C. GEIGER, M.D.
Director of Public Health
SAN FRANCISCO

Attention has recently been drawn to the apparently successful treatment of a case of cyanide poisoning by the use of a 1 per cent methylene blue solution in water, injected intravenously.[1]

REPORT OF CASES

CASE 2.—H. L., a white man, aged about 25, swallowed two number 0 capsules of potassium cyanide in an attempt at suicide; he stated this fact to an official of the Y. M. C. A. in the lobby of that organization's hotel and immediately collapsed. A call was placed with the Central Emergency Hospital for an ambulance. These events occurred between 4:35 and 4:40 p. m., May 18, 1933.

The patient was brought into the Central Emergency Hospital and placed on the table in the treatment room at 4:45 p. m., in an unconscious state, marked cyanosis, body rigid, with clonic spasm of the voluntary musculature, pupils dilated and inactive to light, respirations 12 per minute, of stertorous character, pulse feeble at a rate of about 160 per minute. The odor of cyanide was evident from the respired air.

Respiration ceased during the preparation of the methylene blue solution, and artificial respiration was administered and continued during the injection of methylene blue, which was given by Dr. R. J. Millzner, assistant surgeon. Improvement was evident, with a decrease in the depth of the cyanosis, a lowering of the pulse rate and a partial return to consciousness. Gastric lavage with warm water was begun and continued through 2½ gallons. The odor of cyanide was present in the washings, which contained no food particles. Normal spontaneous respiration returned at the rate of 10 per minute, shortly increasing to 28 per minute. The pulse rate was of better quality, at a rate of from 132 to 144 per minute. With these signs of improvement, but also because of the fact that it was quite definite that a comparatively large amount of cyanide had been taken (two number 0 capsules), a second injection of methylene blue was begun at 5:08 p. m. This was followed by a momentary return of cyanosis and an elevation of the pulse rate from 132 to 144. Carbon dioxide oxygen (carbogen) was given. Return to complete consciousness was rapid, with clearing of cyanosis, normal respiration, and stabilized pulse rate of about 112 to 128 per minute. The patient vomited a greenish tinged fluid, during which there was some distress. An attempt to pass a stomach tube for lavage with sodium thiosulphate solution resulted in placing only about 200 cc. of the solution, and this probably accounts for the emesis.

There was no further discomfort or complication during the forty-eight hour stay in the hospital. Methylene blue was first noticed in the urine at 7 p. m., approximately two hours after the first injection. There was no elevation of temperature above 98.8 F.; the pulse rate dropped gradually to a level of from 78 to 86, and respirations returned to 20 and 18 per minute.

A specimen of blood was obtained a short period after the second injection of methylene blue, in an effort to learn of the possibilities of the formation of methemoglobin. Laboratory study failed to reveal the presence of this substance.

Approximately 0.0416 Gm. of cyanide was found in the washings from the stomach. If the patient swallowed two number 0 capsules, he must have absorbed approximately 1.1 Gm., or 16.4 grains, of the poison.

CASE 3.—E. M., a white man, aged 57, at 9:30 p. m., May 30, ate a banana which had been split and between the two halves of which he had allegedly placed enough potassium cyanide to equal a heaping teaspoonful. On repeated questioning of the patient after recovery, the statement as to the approximate amount of cyanide consumed with the banana was confirmed. The potassium cyanide was taken from a quarter-pound can purchased in a local drug store. From the contents of the can, which was found in the patient's pocket, this amount could be considered substantially correct. Therefore, the quantity consumed by actual weight was approximately 100 grains (6.5 Gm.).

Since the condition of the patient on arrival in the Park Emergency Hospital was such that washing of the stomach contents was not resorted to, the extraordinary amount stated to have been consumed must have been absorbed.

The patient was brought into the hospital at 9:47 p. m., seventeen minutes after taking the poison. On arrival in the hospital, there was marked cyanosis and complete unconsciousness; the pupils were dilated; breathing was extremely difficult and rapid, with a barely perceptible pulse, and a typical odor of cyanide on the breath. Respiration was becoming increasingly labored when the first methylene blue solution was administered at 9:55. A second injection, making 100 cc. in all, was given at 10:30. Between the two injections the patient became conscious, complained severely of pain in the calves of both legs, and talked rationally.

Other than an elevation of temperature to 99.5 F. for only a short while, recovery has been apparently complete.

A specimen of blood, obtained after the second injection of methylene blue, on examination was negative for methemoglobin.

These cases demonstrate three important facts:

1. Methylene blue, intravenously, is useful, definitely beneficial and successful in the treatment of cyanide poisoning.

2. The dye can be used in quantities up to 100 cc. of a 1 per cent solution (1 Gm. of the dye) within a period of one-half hour without untoward symptoms.

3. The use of methylene blue, even to the extent of 100 cc. of the 1 per cent solution (1 Gm. of the dye) did not produce measurable quantities of methemoglobin in the blood of these particular cases.

1. Geiger, J. C.: Cyanide Poisoning in San Francisco, J. A. M. A. **99**: 1944 (Dec. 3) 1932.

SALMONELLA SUIPESTIFER INFECTIONS IN MAN

FURTHER OBSERVATIONS

ANN G. KUTTNER, M.D.
AND
H. D. ZEPP, A.B.
BALTIMORE

In recent years, an increasing number of sporadic cases of Salmonella suipestifer infections in man,[1] not associated with outbreaks of food poisoning, have been reported in all parts of the world. In the great majority of instances, the source of the infection has remained undetermined, and no definite relationship to infected pigs or pork could be established.

These cases have presented an extremely varied clinical picture: in some the signs and symptoms suggested bronchopneumonia, in others typhoid. In some

From the Harriet Lane Home of the Johns Hopkins Hospital and the Department of Pediatrics, Johns Hopkins University.

The work was aided by a grant from the Hartley Corporation. Dr. Kuttner was aided by a grant from the Henry Strong Denison Fund.

1. Branham, Sara E.; Motyca, L. J., and Devine, C. J.: Bacteremia Due to Salmonella Suipestifer, J. A. M. A. **94**: 1758 (May 31) 1930. Bauer, J. T., and McLintock, M.: Fatal Septicemia in Man Due to Bacillus (Salmonella) Suipestifer, J. Infect. Dis. **44**: 292 (April) 1929. Bullowa, J. G. M.: Bacillus Suipestifer Infection of the Lung, M. Clin. North America **12**: 691 (Nov.) 1928. Kopp, R.: Zur Frage der Menschenpathogenität des Bacillus Suipestifer, Deutsche med. Wchnschr. **52**: 2156 (Dec. 17) 1926. Krüger, H.: Ueber den Nachweis des Bact. suipestifer bei einem typhusähnlicher Erkranken des Menschen, Zentralbl. f. Bakt. (pt. 1) **123**: 416 (Feb. 3) 1932. MacKenzie, J.: Infection of Man by an Organism Closely Allied to Bacillus Suipestifer (Hog Cholera), J. Roy. Army M. Corps **39**: 51, 1922. Rau, H.: Erkrankung eims Säügling durch Bacillus suipestifer, Ztschr. f. Kinderh. **52**: 510, 1932. Shaw, F. W.: An Infection of Man Probably Due to Salmonella Suipestifer, J. Lab. & Clin. Med. **12**: 141 (Nov.) 1926. Tenbroeck, Carl; Li, C. P., and Yü, H.: Studies on Paratyphoid C Bacilli Isolated in China, J. Exper. Med. **53**: 307 (March) 1931.

instances Salmonella suipestifer infection was found as a postoperative complication, and in children pyarthrosis has been reported by several observers.[2] The diagnosis was made by blood culture in all the cases except those of arthritis. In the latter, Salmonella suipestifer was grown from the pus aspirated from the affected joint. In one instance this organism has been isolated from the spinal fluid of a case of chronic meningitis.[3] In 1932 we reported from the Harriet Lane Home, Johns Hopkins Hospital, a series of seven cases of Salmonella suipestifer septicemia in children varying in age from 7 months to 6 years.[3] Four of the patients were admitted with a preliminary diagnosis of typhoid, one had bronchopneumonia, one had congenital syphilis, and one had had an abdominal operation. The organism was isolated by blood culture in every instance. The disease was relatively mild. None of the children developed complications, and all of them made good recoveries.

During the course of 1932-1933, we have observed four more cases of Salmonella suipestifer infection: three in children and one in an adult. The clinical observations in these cases differed greatly from those previously described by us, and in one of them death occurred. It seemed of interest, therefore, to report these cases in detail in order to emphasize the increasing prevalence of this infection in Baltimore, and the varied clinical picture it may assume.

REPORT OF CASES

CASE 1.[4]—L. E., a Negress, aged 28, living in Baltimore, was admitted to the nose and throat service, Aug. 29, 1932, with a diagnosis of nasal polypi, chronic ethmoiditis, bilateral chronic maxillary sinusitis and chronic tonsillitis. The patient had been suffering from sore throat for several months but had no other complaints. On physical examination she was found to have a few scattered râles at the left base but was considered in good condition for general anesthesia. August 30, a bilateral nasal ethmoid and sphenoid operation was performed. The patient stood the operation well and had no fever. September 1, a bilateral radical antrum was done. Pus was obtained from the left antrum, which on culture showed alpha streptococci.

The patient developed fever following operation, ranging from 102 to 103 F. She had no complaint except headache. Physical examination was negative except for coarse râles at the left base. White blood cells numbered 7,600; polymorphonuclears, 64 per cent; lymphocytes, 36 per cent. The urine showed from 5 to 15 white blood cells in a high power field in the centrifugated specimen.

September 4, the white blood count was still 6,400, with the temperature ranging from 103 to 105. Some frequency of urination was noted. A catheterized specimen of urine showed from 3 to 5 white blood cells per high power field. Urine culture yielded Staphylococcus aureus.

September 6, the patient complained of dysuria and began to cough.

September 7, the percussion note at the left base was impaired and the temperature was still high. The patient was transferred to the medical service. Blood cultures taken September 3 and 4 were both positive for Salmonella suipestifer, group II. There was no brachycardia. There were no rose spots. The tip of the spleen was barely palpable on one occasion. The patient's temperature remained hectic from the 1st to the 13th, when it gradually became normal. The cough continued. Dysuria and frequency persisted.

September 9, a catheterized specimen of urine showed 100 white blood cells per high power field. Urine cultures, September 8 and 12, showed almost pure cultures of Salmonella suipestifer. Roentgen examination revealed the left base hazy, probably because of thickened pleura; the lungs otherwise were clear. Cultures from the sinuses, nose, throat and stool were negative for Salmonella suipestifer.

September 15, serum agglutinations were negative for typhoid, paratyphoid A and paratyphoid B. They were positive for Salmonella suipestifer, group II, 1:80. They were positive for a homologous organism, 1:160. The Wassermann reaction was negative. The white blood count was consistently low, from 9,350 to 4,700. As the pyuria cleared, the dysuria disappeared. Urine cultures became negative for suipestifer. Blood cultures, September 12, were negative. Renal function was normal. Serum obtained October 12 agglutinated the homologous strain in a dilution of 1:160 and a known porcine strain of suipestifer (group II) in a dilution of 1:640. The patient was discharged, October 12, six weeks after admission.

The final diagnoses were: 1. Chronic pansinusitis. 2. Septicemia, Salmonella suipestifer. 3. Cystitis, Salmonella suipestifer. 4. Questionable bronchopneumonia, left base.

CASE 2.—R. G., a Negro boy, aged 2 years, living in Baltimore, was admitted Jan. 16, 1933, with a diagnosis of bronchopneumonia. The patient's past history was negative. He became ill suddenly, Dec. 28, 1932, nineteen days before admission, with cough, fever and rapid, grunting respirations. A doctor was called, who made a diagnosis of pneumonia. A public health nurse visited him daily, until the day of admission. He remained very sick during the nineteen days prior to admission with a temperature fluctuating from 105 to normal. His cough continued, and he vomited occasionally.

On admission, the temperature was 102, respiration 32, pulse 96. The patient was acutely ill, anemic and malnourished and was in marked respiratory distress. He was unable to breathe except in an upright position. Respirations were shallow and grunting, with dilatation of the alae nasae. The sclerae were slightly icteric, and there was slight cyanosis. There were no rose spots. The tonsils were enlarged; the pharynx was edematous. Both lung bases were dull to percussion; the breath sounds were suppressed and tubular in character. Fine and coarse râles were heard. Both apexes were relatively clear. Fluoroscopic examination showed patchy consolidation at both bases. The heart was enlarged to the right; the sounds were of fair quality, with no murmurs. The abdomen was not distended. The liver was enlarged 4 cm. below the costal margin. The tip of the spleen could be just felt. There was no swelling or tenderness of the extremities. Neurologic examination was negative.

On admission, the red blood cells numbered 2,150,000; hemoglobin was 35 per cent; white blood cells, 17,400. The differential count showed: polymorphonuclears, 42 per cent; lymphocytes, 52 per cent. There were no sickle cells. Platelets, numbered 150,000. The bleeding time was not prolonged. Examination of the urine was negative, except for a trace of diacetic acid. Throat culture revealed type III pneumococcus. The Wassermann reaction was negative.

Because of the signs of heart failure, the patient was given digitalis, with some improvement. Three days after admission, January 19, he received a small transfusion, without any reaction. The following day he seemed slightly better, the heart had decreased in size, and the temperature was 100.4. A second transfusion was performed on the twenty-first. The following day he vomited coffee ground material, the stools and sputum were streaked with blood, the urine was grossly bloody, and his gums were bleeding. There were petechiae on the hard palate.

January 22, the red blood cells numbered 3,800,000; hemoglobin was 50 per cent; white blood cells numbered 7,500; reticulocytes, 18 per cent. The bleeding time was twenty-seven minutes, the clotting time four and one-half minutes. Platelets were completely absent. Blood cultures taken January 16, 18 and 19, were all positive for Salmonella suipestifer, group II. Serum obtained on the 23rd showed no agglutinins for Salmonella suipestifer. The patient was given three more transfusions but the bleeding continued, and the patient died,

2. Nabarro, David; White, P. B.; Dyke, S. K., and Scott, W. M.: Two Cases of Human Infection by the American Hog Cholera Bacillus, Lancet **2**: 868 (Oct. 26) 1929. Crevell, van S., and Ruys, A. C.: Salmonella Suipestifer Infection bei einem Saügling, Ztschr. f. Kinderh. **54**: 725, 1933.

3. Kuttner, A. G., and Zepp, H. D.: Paratyphoid-Like Fever in Children Due to the Salmonella Suipestifer Group, Bull. Johns Hopkins Hosp. **51**: 373, 1932.

4. This case is included through the courtesy of the medical department.

January 25, nine days after admission. Stool obtained on the 25th was positive for suipestifer, group II. Postmortem blood culture was positive for suipestifer, group II. Postmortem lung puncture yielded Bacillus influenzae and pneumococcus, type III, negative for suipestifer. The postmortem spinal fluid was sterile.

Autopsy revealed purpura with hemorrhage into the tonsils, lymph nodes, pericardium, endocardium, kidneys, pelves of the kidneys, ureters, spleen, bladder, suprarenals, testes, stomach and intestine.

The lungs, on gross examination, had a thick, fibrinous exudate over both bases. Both lower lobes felt solid, and on section areas of denser consolidation surrounded all the small bronchioles.

Microscopic examination showed the bronchi filled with exudate, consisting mainly of polymorphonuclears and fibrin. The walls of the bronchioles were thickened and infiltrated with mononuclears. The alveoli in many places were filled with edema fluid, some polymorphonuclears and fibrin. The typical picture of interstitial bronchopneumonia was presented, characteristic of pneumonias caused by viruses. In spite of careful search, no inclusion bodies were found. Two postmortem lung punctures showed pneumococcus, type III, and influenza bacilli, but no Salmonella suipestifer, in spite of the fact that this organism was present in the blood. No evidence was obtained, therefore, that Salmonella suipestifer was the etiologic agent responsible for the pneumonia.

Focal necroses in the liver resembled those found in typhoid. Aside from hemorrhages, no lesions were found in the intestine.

CASE 3.—J. S., a Negro boy, aged 19 months, living in Baltimore, was admitted, Feb. 21, 1933, with a diagnosis of pyarthrosis. The family and past histories were negative.

The patient was well until February 7, two weeks before admission, when he lost his appetite and did not appear to be doing well. February 15, six days before admission, he bumped his left knee and complained that it hurt, although the mother could not see any swelling or redness. The following day, February 16, the knee began to swell and the patient felt feverish. He limped for two days until February 18, three days before admission, when he refused to stand on his left leg. The fever continued. He was seen in the dispensary two days before admission, February 19, when he had a temperature of 103. He was found to have pharyngitis. The soft tissue of the left thigh and knee were swollen and tender. The impression at that time was that the condition was cellulitis. He failed to improve, and the fever continued. The patient was brought to the dispensary, February 21, and 10 cc. of greenish purulent pus was aspirated from the left knee joint. He was admitted on the same day.

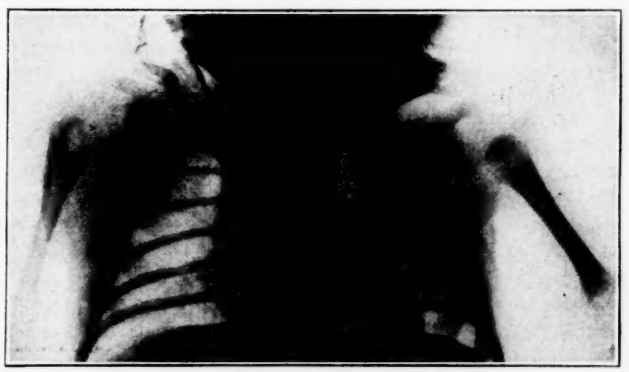
On admission, the temperature was 103.6. The patient was well nourished, irritable and alert, and did not appear particularly sick. He lay with his left knee slightly flexed and externally rotated. Physical examination revealed enlargement of the cervical lymph nodes, the tonsils and pharynx injected and edematous, and a slight mucopurulent posterior nasal discharge. The heart was not enlarged; the rate was rapid. The liver and spleen were not felt. The left knee was diffusely swollen, hot, and tender on palpation and passive movement. There was fluctuation within the joint.

Laboratory examination revealed: hemoglobin, 75 per cent; white blood cells, 28,040; polymorphonuclears, 64 per cent; platelets, abundant. The urine was normal. The Wassermann reaction was negative. Blood culture on the day of admission was sterile. Culture from the pus aspirated from the left knee yielded Salmonella suipestifer, group II.

The knee was aspirated every day from the 21st to the 25th, inclusive, from 3 to 10 cc. being obtained. The knee was put in traction on the 23d, two days after admission. The patient's temperature was lower, the second week in the hospital, but it was still necessary to aspirate the knee every other day, sometimes as much as 20 cc. of purulent material being obtained. The patient had a pharyngitis during most of his stay in the hospital, but two throat cultures failed to show either suipestifer or beta streptococci. All the cultures made from the pus aspirated from the joint showed Salmonella suipestifer until March 17, twenty-five days after admission, when the culture was negative. No further aspirations were done after this date, the swelling subsided gradually, and passive exercise was started, March 25. Traction was discontinued, March 28. There was only slight limitation of extension and the patient was able to bear weight on his leg fairly well, although he had a marked limp. Two roentgenograms failed to show any damage to the bones. The patient's serum agglutinated the homologous organism in a dilution of 1:160. The stool was negative for suipestifer. As in the majority of the other cases of Salmonella suipestifer infection, no source of infection was found. No other member of the family was sick and there were no butchers or farm workers in the family. The mother's serum failed to agglutinate the organism isolated from the patient.

The patient was discharged, April 9, after seven weeks in the hospital. Serum obtained one month after discharge, May 6, agglutinated the homologous and other strains of Salmonella suipestifer, group II, in a dilution of 1:160.

CASE 4.—F. W., a white girl, aged 5 weeks, living in Fullerton, Md., was admitted, April 8, 1933, with a diagnosis of arthritis. There was no history of syphilis or gonorrhea. The patient was breast fed. The mother gave a history of having had a breast abscess, which was healed at the time of admission. The patient had nursed from the infected breast, but the nature of the infection was not known. The patient had been entirely well until ten days before admission, March 29, when



Subluxation of right shoulder; evidence of fluid in joint; osteomyelitis of right humerus.

the mother noticed that the infant was not moving her right arm and cried when it was touched. The patient had no fever and did not seem sick. No swelling was noted, until the day before admission, April 7, when the mother noticed that the right shoulder joint was swollen but not hot or red.

On admission the patient was well nourished and the infant did not appear acutely ill, temperature was normal. She did not move her right arm and cried when it was handled. There was no general glandular enlargement; the epitrochlears were not felt. The eyes were normal. The pharynx was slightly red. The heart and lungs were normal. The spleen was easily palpable. There was no vaginal discharge. The right shoulder joint was swollen; there was slight local heat but no redness. The other joints were normal.

Laboratory examination revealed red blood cells, 3,900,000; hemoglobin, 94 per cent; white blood cells, 22,600; polymorphonuclears, 46 per cent; lymphocytes, 64 per cent. Platelets were abundant. The urine was normal.

Attempts to aspirate the joint the day of admission failed. The patient remained afebrile and took her feedings well. A roentgenogram of the right shoulder, April 10, showed fluid in the joint and an area of destruction at the upper end of the humerus. Blood cultures taken, April 10 and 13, were negative.

April 13, the shoulder was again aspirated and 0.5 cc. of thick pus obtained. A smear showed gram-negative bacilli. A culture yielded Salmonella suipestifer, group II. Serum obtained from the patient on the same date failed to agglutinate typhoid, paratyphoid A and B or Alcaligenes melitensis; agglutination with Salmonella suipestifer, group II, was positive in a dilution of 1:320.

Repeated stool and urine cultures have been negative for Salmonella suipestifer. The patient's shoulder was immobilized for three weeks. The swelling has decreased and the patient is improving gradually.

The serum of the patient's parents was tested for agglutinins for Salmonella suipestifer. The father's serum was negative, but the mother agglutinated the organism isolated from the patient in a dilution of 1:80. The family live in the country but do not keep pigs.

BACTERIOLOGY

The cultures isolated from these patients were gram-negative motile bacilli that fermented dextrose, mannite, maltose, rhamnose and xylose with the production of gas and failed to ferment lactose, saccharose, arabinose, trehalose and inosite. They all produced blackening on lead acetate mediums. These organisms were not agglutinated or agglutinated only in low dilutions by paratyphoid B serum but agglutinated well in serums produced by the injection into rabbits of group II Salmonella suipestifer of human and porcine origin. They failed to agglutinate in immune serum produced by the injection of the specific phase of Salmonella suipestifer, group I. These cultures were identical with Salmonella suipestifer, group II, cultures isolated by us [3] in 1932. The virulence of the cultures was tested by injecting 0.01 and 0.001 of a twenty-four hour broth culture subcutaneously into rabbits. All the cultures proved to be virulent, killing rabbits in from six to fifteen days.

COMMENT

Four more cases of Salmonella suipestifer infection in man have been reported: one in an adult and three in children. The adult developed a suipestifer septicemia and cystitis, following a radical antrum operation. Two of the children had arthritis and one of them showed osteomyelitis. The other child developed a suipestifer septicemia accompanied by severe purpura, during the course of bronchopneumonia. No complications such as arthritis, osteomyelitis, cystitis and purpura were observed in the group of cases reported by us [3] in 1932. It is of interest that this organism, Salmonella suipestifer, group II, can produce arthritis and osteomyelitis unaccompanied by fever (case 4). Nabarro and his associates [2] described a similar case in England in an infant, aged 8 months, due to Salmonella suipestifer, group I.

Purpura has been observed as a rare complication in paratyphoid B fever.[5] In none of the cases of suipestifer infection in man that we have been able to find in the literature has severe purpura with complete disappearance of platelets been described (case 2). Since purpura is a common symptom of pigs infected with the hog cholera virus, it was thought possible, in view of the interstitial bronchopneumonia found at autopsy, that in this patient Salmonella suipestifer might have been associated with the virus of hog cholera. Unfortunately, no experiments to determine the presence of the virus were undertaken. On the other hand, it is entirely possible that the purpuric manifestations were merely the result of a severe infection in a debilitated child and that some virus other than that of hog cholera was responsible for the pathologic picture in the lung. None of the other cases showed any evidence of purpura, and their platelet counts were entirely normal.

Three of the patients live in Baltimore; one lives in the country. In no instance was any association with infected pigs established, and none of the cases had any contact with each other. There was no history of a similar illness in any other member of the family, although the mother of one of the patients agglutinated the organism isolated from her daughter.

The organisms isolated from these four cases all belong to group II, Salmonella suipestifer, although group I is generally considered the American type, most commonly associated with hog cholera in this country. In recent years, however, group II has been associated with increasing frequency from infected pigs in the United States.[6] In 1932 our observations were similar: six of the seven cases reported belonged to group II.

5. Jameson, H. P., and Signy, A.: A Case of Paratyphoid B Infection with Purpura and Specific Bronchopneumonia, Arch. Dis. Childhood 3: 238 (Oct.) 1928.

6. Tenbroeck, Carl: Personal communication to the authors.

MENINGOCOCCIC MENINGITIS IN INFANCY

REPORT OF CASE

ALAN BROWN, M.D. (TOR.), F.R.C.P. (CAN.)
AND
NELLES SILVERTHORNE, M.B. (TOR.)
TORONTO

This report embodies the observations of meningococcic septicemia with meningitis in a 22-day old infant with a diagnosis correctly made within twenty-four hours of the onset, immediate, adequate serum therapy given by the most desired routes, and early recovery. Very few cases reported in the literature at this early age have been found. A case has been reported by McLean and Caffey [1] in a 23-day old infant. An individual may be susceptible at any age, since the youngest patient in whom the condition has been recorded is the present one, and the oldest is a woman of 61 years.[2] Holt and Howland,[3] in their textbook, state that "the youngest case we have seen was in an infant 5 weeks old." These authors also remark that 12 per cent of patients were under 1 year. Ker [4] points out that 14 per cent of his patients were under 1 year of age.

REPORT OF CASE

History.—J. R., a girl baby, aged 22 days, admitted to the hospital, May 15, and discharged, May 29, 1933, was sent into the hospital by one of us (A. B.) with a diagnosis of meningitis, which was made by observing carefully the few physical signs that were present.

Fever, vomiting, irritability and anorexia had been present for from twelve to twenty-four hours. There were six contacts, all adults, two of them with head colds. Otherwise the family history was negative. The child had been delivered with forceps but had been perfectly normal since birth. She had nursed since birth and no other feeding had been necessary. The baby was apparently quite healthy until the day before admission, when she became feverish and drowsy. She nursed poorly and vomited once on the day of admission.

Examination.—The infant was well nourished and developed. She was quite drowsy and was irritable on being disturbed. The anterior fontanel was tense, with a feeling of increased pressure yet not definitely bulging. Occasional quick lateral nystagmoid movements of the eyes were noted. No rash or petechiae were seen. Examination did not reveal the slightest sign of nuchal rigidity. Kernig's sign was positive bilaterally, although this is not always reliable in a new-born infant as a diagnostic criterion of meningitis. Otherwise, the physical examination was negative.

From the Wards of the Hospital for Sick Children, Department of Paediatrics and Connaught Laboratories, University of Toronto.

1. McLean, Stafford, and Caffey, J. P.: Endemic Meningococcus Meningitis, Am. J. Dis. Child. 35: 357-387 (March) 1928.
2. Unpublished reports.
3. Holt, L. E., and Howland, John: Diseases of Infancy and Childhood, ed. 9, New York, D. Appleton & Co., 1926.
4. Ker's Infectious Diseases, ed. 3, New York, Oxford University Press, 1929.

Lumbar puncture revealed a high cell count and many intracellular and extracellular gram-negative diplococci. Some were seen as a single coccus.

A provisional diagnosis of meningococcic meningitis was made.

Progress.—The temperature on admission was 105 F., varying around 100 to 103 for eight days and finally falling by lysis to normal toward the day of discharge. The baby seemed much the same as on the first day of hospitalization, when on May 18, three days later, general improvement was noticed, as manifested by a better appetite, less irritability and noticing the surroundings. The condition remained much the same until May 22, when a definite neck rigidity was noticed. From this time on the baby gradually improved until all observations were negative on the day of discharge. It will be seen in the table that the cerebrospinal fluid taken at lumbar puncture was sterile for the first time on the ninth day following hospitalization.

The white blood cell count was 14,300, with 76 per cent polymorphonuclear leukocytes. Hemoglobin was 80 per cent. The urine was normal. The intracutaneous tuberculin test was negative. Blood culture and a nasopharyngeal swab was positive for meningococci on admission.

Treatment.—On the first day of admission, within half an hour, specific antimeningococcic serum was administered, which on later test proved to agglutinate in high titer the infecting meningococcus. This serum was given intravenously on the first and third days of hospitalization in approximately 70 cc. of 5 per cent dextrose in physiologic solution of sodium chloride. Usually when intravenous therapy is given, the continuous intravenous drip method is employed, with serum administered in dextrose and saline solution.[5] In this case the infant was too young, so that ordinary intravenous therapy was given. Daily lumbar puncture was performed, with drainage of spinal fluid and administration of antimeningococcic serum.

Observations on the Cerebrospinal Fluid

Day	Amount, Cc.	Pressure	Appearance	Cells	Polymorphonuclears, per Cent	Smear	Culture	Antimeningococcic Serum, Cc.*
1	12	++	Cloudy	6,000	95	+	+	12 I.V. 12 I.T.
2	25	+	Cloudy	8,400	90	+	+	15 I.T.
3	15	+	Turbid	6,600	90	+	+	15 I.V. 10 I.T.
4	10	±	Cloudy	5,300	90	+	+	.....
5	10	Decreased	Cloudy	6,000	92	+	—	12 I.T.
6	16	Decreased	Cloudy	4,200	90	+	—	10 I.T.
7	12	Decreased	Cloudy	5,250	90	+	—	9 I.T.
8	No puncture done							
9	10	Decreased	Cloudy	3,000	90	—	—	10 I.T.
10	12	Decreased	Cloudy	3,500	90	—	—	10 I.T.
11	14	Decreased	Cloudy	2,800	85	—	—	10 I.T.
	No puncture until							
15	10	Decreased	Slightly turbid	900	75	—	—	.....
								27 I.V. 98 I.T.
Total								125 cc.

* I.V., intravenously; I.T., intrathecally.

COMMENT

We believe that early diagnosis, together with more intensive and adequate serum therapy by early use of the intravenous and intrathecal routes will materially reduce the mortality rate in this disease. It is currently believed that there is a great tendency for a block to occur at the base of the brain in very young infants and that cisternal and ventricular punctures may be necessary. We should like to emphasize the fact that, by the use of continuous intravenous therapy with serum, or, in very young infants, the ordinary administration of intravenous fluid, with serum, one tends to increase the amount and flow of cerebrospinal fluid.

5. Brown and Tisdall: Common Procedures in Paediatrics, ed. 3.

SUMMARY AND CONCLUSIONS

1. A 22-day old infant had meningococcic septicemia with meningitis.
2. Sterilization of the spinal fluid occurred nine days after onset.
3. The infant was discharged from the hospital cured in fifteen days.
4. The intravenous route was used on the first and third days for the administration of antimeningococcic serum. The intrathecal route was used daily.

THE FORM OF THE STOOL AS A CRITERION OF LAXATION

GEORGE R. COWGILL, PH.D.
WILLIAM E. ANDERSON, M.A.
AND
ALBERT J. SULLIVAN, M.D.
NEW HAVEN, CONN.

It has been well established that one of the important functions of the large intestine is to dehydrate the food residues received from the small bowel in preparation for elimination by the act of defecation. Burnett [1] has made this the basis of a test for what he calls intestinal indigestion and has suggested that the ability to form a hard stool made up of numerous smaller parts called *fecal units* indicates that the large intestine is in excellent condition; cases were described in which the shape of the stool was changed by dietary means from a "soft and formless" type to a "unit basis" with concomitant improvement of health. He also reported on the rate of passage of food residues through the alimentary tract, his method being to study the time required for practically all of a 50 cc. quantity of millet seed to be eliminated. As a result of such tests, Burnett was led to believe that the normal intestinal rate is from 62 to 130 hours, a period much longer than is generally accepted. This point of view was favored by Alvarez and Freedlander,[2] who studied the time required for the passage of glass beads. The numerous experiments of Hoelzel,[3] however, who used not only millet seeds and glass beads but also gold, silver and rubber balls, steel ball bearings and other materials, have helped to explain these unusual results of Burnett and of Alvarez and Freedlander. Hoelzel wrote that "rates of passage more or less proportional to the specific gravity of the test materials were found, the heavier materials passing slower than light materials." Concerning Burnett's use of millet seed, Hoelzel stated that the ingestion of a 50 cc. quantity actually delayed intestinal passage about twelve hours and that "Burnett's method therefore is misleading rather than advantageous."

During the past few years we have had the opportunity of studying the value of bran as a laxative for men and have made observations not only on normal individuals [4] but on a group of patients [5] as well. In

From the Departments of Physiological Chemistry and of Internal Medicine, Yale University School of Medicine.

1. Burnett, F. L.: Fecal Units and Intestinal Rate: A Basis for the Study of Health and Intestinal Indigestion, Boston M. & S. J. **184:** 371-376 (April 14) 1921. The Intestinal Rate and the Form of the Feces, Am. J. Roentgenol. **10:** 599-604 (Aug.) 1923.
2. Alvarez, W. C., and Freedlander, B. L.: The Rate of Progress of Food Residues Through the Bowel, J. A. M. A. **83:** 576-580 (Aug. 23) 1924.
3. Hoelzel, Frederick: The Rate of Passage of Inert Materials Through the Digestive Tract, Am. J. Physiol. **92:** 466-497 (March) 1930.
4. Cowgill, G. R., and Anderson, W. E.: Laxative Effects of Wheat Bran and "Washed Bran" in Healthy Men: A Comparative Study, J. A. M. A. **98:** 1866-1875 (May 28) 1932.
5. Cowgill, G. R., and Sullivan, A. J.: Further Studies on the Use of Wheat Bran as a Laxative: Observations on Patients, J. A. M. A. **100:** 795-802 (March 18) 1933.

our study the men subsisted on carefully controlled diets of a known roughage content, all the foods being analyzed for crude fiber. The total fiber content of the food was taken as a measure of the amount of roughage ingested. Charcoal and carmine were the only materials other than the foods taken in these experiments, and they were ingested only in small quantities sufficient to mark the residues from the meals eaten at the beginning and end of experimental periods of at least seven days' duration. We feel, therefore, that our observations were made under conditions in which the influence of any inert or non-nutritive foreign substance was practically negligible. In other words, the laxative performances exhibited by our human subjects were almost entirely attributable to the foods and test substances ingested.

Reference has already been made to the unusually long periods of passage of food residues through the alimentary tract reported by Burnett and Alvarez. It seems pertinent, therefore, to call attention to the results obtained in our investigations in which laxation was studied in twenty men over periods of from at least a month to as many as sixty-two days.[6] Our

Fig. 1.—Specimen passed by E. W. S. while subsisting on the basal diet only. This is an example of the hard, scybalous "fecal-unit" type of stool. Record of subjective impressions describes the movement as "very painful and difficult."

observations support the more general view held by gastro-enterologists, roentgenologists and others that, under "normal" laxative conditions, interpreted subjectively as "satisfactory," food residues require from about sixteen to twenty-four hours to traverse the alimentary tract.

In the course of our work we became impressed with the importance of purely subjective criteria of laxation; namely (*a*) the ease with which defecation takes place, and (*b*) the presence or absence of a sense of complete emptying at the time the dejecta are passed. Our records indicate that the passage of stools of the definitely fecal-unit type, described by Burnett, is a disagreeable, often painful, process and is associated subjectively by the individual with constipation. Figure 1 illustrates this. The fecal-unit type of stool is also the type observed clinically in cases of spastic constipation and mucous colitis and is produced by hospital patients subsisting on liquid or "soft" diets; its small hard character is probably due to a too prolonged dehydrating action of the colon on too small an amount of indigestible food residue.

6. Cowgill and Anderson.[4] Cowgill and Sullivan.[5]

Our series of photographs contain many illustrations of the different types of stools described by Burnett. The records of subjective impressions show that a fairly large, sausage-shaped stool, with few or no markings indicative of so-called haustral contractions, is usually easy to pass and its elimination is generally

Fig. 2.—Specimen passed by M. L. P. while ingesting the basal diet plus a processed bran product. The large, sausage-shaped stool was characteristic of this dietary regimen. Records of subjective impressions report "an easy, satisfying movement."

accompanied by a sense that emptying is complete and is followed by a feeling of well being. Likewise, a large bulky "formless" stool, such as is obtained when wheat bran or milled bran products are ingested in appropriate amounts, gives no difficulty whatever during the act of defecation. Figures 2 and 3 show such stools observed in the course of our study.

Occasionally the stool showed both a fecal-unit part and a sausage-shaped portion. Figure 4 is an example of this. The records of subjective impressions made

Fig. 3.—Specimen passed by F. B. W. while subsisting on the basal diet plus about an ounce daily of wheat bran, which had been treated with weak acid in order to remove phytin. This is an example of what might be called the semiformed or a formless stool, which was characteristic of this dietary regimen. The record of subjective impressions describes it as "a most satisfactory movement."

at the time these stools were passed contain such remarks as "a large stool, satisfying but hard to start," "a fairly easy movement, first part tending to be scybalous," and others similar in nature. This type of stool is very likely to appear when the individual

changes from a low-roughage diet to a high-roughage regimen; presumably, the increased intake of roughage stimulates intestinal motility, and the food residues from the new meal reach the rectum in time to be passed along with the scybalous masses formed by the residues from the low-roughage regimen. In all probability, the presence of the extra roughage serves to increase the stimulus for defecation. A similar phenomenon is that observed when a patient whose bowels are constipated has been given a barium meal as part of a roentgenologic examination. The scybalous masses characteristic of the constipation are eliminated just ahead of the roughage of the barium meal.

The feeling that emptying is complete may be related to the size of the stool, the easy passage of a large amount of material nearly always being interpreted subjectively as a "satisfying movement." There seems little doubt that the pain accompanying the elimination of fecal-unit stools is due to the hardness of the fecal masses and their size. It seems obvious that the passage of any hard object approximating at all the diameter of a moderately distended anal ring should be more painful than the passage of an object of the same size but of softer and therefore more pliable consistency.

Fig. 4.—Specimen passed by P. S. while receiving the basal diet plus a processed bran product. This stool represents a combination of the fecal-unit type and the sausage type. The record of subjective impressions made at the time this specimen was passed describes it as a "satisfactory movement except for the first part, which is scybalous."

In view of these observations, we suggest that clinicians who are treating cases of constipation give due attention to the matter of securing an easy passage of dejecta together with a satisfying sense that all fecal material has been eliminated. We have not seen this point emphasized in the literature but are convinced from our observations, made under carefully controlled dietary conditions, that it is important.

In stating his belief that defecation at least once a day is not necessary for every so-called normal individual, Alvarez [7] writes that he has seen many persons who defecate not more than once every three or more days, and this without definite deleterious effects. We are naturally led to inquire as to how painful each defecation may be in such an individual when it does finally occur. One of the patients in the group reported in our second paper [5] was in the habit of defecating about once every three days, but the difficulty with which each elimination took place was sufficient to cause him to inquire as to how he might be treated for what he regarded as definite constipation.

What may appear to the clinician as absence of stasis may still be regarded as definite "constipation" by the patient. For example, the clinician may look on movements occurring once a day as evidence that material can pass through the alimentary tract without obstruction and does pass through in what appears to be a reasonable time. The patient, on the other hand, may consider that his bowels are constipated because the dejecta are of very solid consistency and difficult to pass; such a patient will not be satisfied that his constipation has been "cured" until he can accomplish the act of defecation comfortably and completely.

We suggest that, so far as the form of the stool is to be taken as a criterion of the state of laxation prevailing in the individual, the fecal-unit type described by Burnett be regarded as one extreme indicative of constipation—or, rather, indicative of lack of sufficient indigestible material to allow formation of a stool suitable for a completely satisfactory defecation—with a formless watery stool as the opposite extreme; and that for an appropriate objective of his therapy the clinician should aim at the production of a fairly large sausage-shaped stool having few or no markings indicative of haustral contractions.

333 Cedar Street.

7. Alvarez, W. C.: Intestinal Auto-Intoxication, Physiol. Rev. **4**: 352-393 (July) 1924.

Clinical Notes, Suggestions and New Instruments

VITAMIN D IN THE TREATMENT OF ACNE VULGARIS

ABRAHAM DOKTORSKY, B.S., AND S. S. PLATT, B.S.
CHICAGO

It is known that cases of acne vulgaris are improved temporarily by treatment with ultraviolet rays. The present work was based on the supposition that the activation of ergosterol in the skin by ultraviolet rays is the prime factor for this temporary relief in acne. We therefore attempted to alleviate acne by the direct ingestion of vitamin D in the form of viosterol.

We ourselves were our first patients, since both of us have this condition. We started with a dosage of 10 drops a day of Mead's viosterol in oil 250 D and increased this during a period of two weeks to 20 drops a day. After continuing for a period of one month we observed by actual count of pustules a decrease of about 75 or 80 per cent. We considered these results satisfactory enough to warrant experimentation on a larger number of subjects.

The subjects chosen for the experiment were thirty-five men and women from the University of Chicago, ranging in age from 17 to 30. All were started on the same dosage that we had taken; later it was increased to 20 drops a day. After a period of from four to five weeks we found a 70 to 80 per cent improvement in 90 per cent of the cases. In the remaining subjects, a 40 to 50 per cent improvement was observed. These results are based on actual counts of the pustules on the chest, face and back. In all the subjects the blood calcium remained normal. As a control we discontinued the treatment for two weeks with ten different subjects picked at random from this group and found a great increase in the number of pustules over that found during the period of treatment. On the other hand, those who continued the treatment showed a sustained improvement.

This preliminary communication is published with the hope that this form of treatment will be given further trial by the general practitioner and dermatologist. The work was done under the supervision of Dr. A. B. Luckhardt.

From the Physiological Laboratories of the University of Chicago.

HEMOSTATIC SCALP CLIP

ALFRED W. ADSON, M.D., ROCHESTER, MINN.
AND
EDGAR F. FINCHER, JR., M.D., ATLANTA, GA.

The time-consuming procedure of opening and closing in craniotomy has not been improved to the same degree as have diagnostic methods and surgical treatment of cerebral neoplasms. Many methods for the control of hemorrhage from the scalp have been employed, but still there remains ample opportunity for additional aids.

The scalp tourniquet was not practicable, for it was difficult to hold it in place during the operation, and it could not always be placed so as to control the hemorrhage. The running lock stitch served its place for hemostasis, but again it was unsatisfactory, for it required additional time to sew it in place; often it failed to control hemorrhage, and more often it devitalized the cut edge of the scalp.

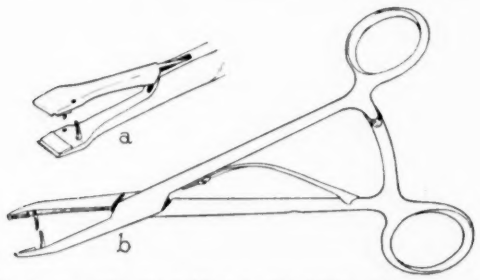


Fig. 1.—*a*, scalp clip holder; *b*, clip holder, illustrating jaws.

The scalp clamps, if properly applied, controlled the bleeding from the cut edges of the scalp, but they frequently crushed the edges of the scalp, besides cluttering the wound with forceps. The pedicle clamp had a place in the hemostatic armamentarium, but it too is soon to be discarded, since it requires additional time to apply, and hemorrhage occasionally occurs from the internal surface of the bone flap following its removal.

all the layers of scalp, especially if the scalp had been infiltrated with a local anesthetic. Swift called Adson's attention to the Willus Andrews clip, which was made from a flat, circular ring of german silver. The ring was bent at an angle to form a staple, with two sets of two teeth opposite each other for the purpose of fixing the position of the staple-like clip. These clips were used, but we soon learned that they were too large to be accurately placed in the corners of the wound. The application of the clip with Ochsner forceps was an awkward procedure, but no accompanying holder had been provided. The V shape, where the ring was bent at the diameter of the circle, had a tendency to compress the margin of the scalp too tightly if the clip was compressed sufficiently to remain in place. The clip could be used again many times, but there was no special arrangement for reshaping the clips to a standard opening.

We were convinced that a clip could be made that would control bleeding from the scalp without traumatizing the galea or skin, that could be applied more quickly than pointed forceps, that would remain in place until removed, and that would avoid the necessity of filling the wound with instruments. Following is the description of the scalp clip, the holder, the rack for clips and the reshaper:

The clip is stamped, from a copper alloy, in the shape of an open rectangle 22 by 12 mm., with the band measuring 3 mm. wide and 0.3 mm. thick. This is then shaped into an open U, with teeth at each corner opposing one another. The opening of the clip is standardized by the reshaper, in order that it may always be open enough to include the galea and the full thickness of the skin. The straight lines of the clips allow one to apply them side by side, avoiding hemorrhage between clips.

The clip holder (fig. 1) is equipped with jaws that hold the clip in readiness for use, with two posts situated behind the clip to permit the operator to apply force in adjusting the clip to the scalp. The metal plates in the jaws are of such thickness as to compress the edges of the clip evenly into a U shape without producing more pressure in one place than in another (fig. 2 *c*). The U shape prevents the injury to the edge of the scalp that commonly occurred when V-shaped clips were used. Removal of the clips from the rack, with relative positions of open and closed clips, held in the holder, may be noted in figure 2. In loading the holder, the forceps portion is closed sufficiently to lock the ratchet, after which a nurse takes the instrument between her thumb and first finger, holds it just above the box joint, and slides the clip holder onto the clip, which is resting on the rack. The clips must be properly shaped (fig. 3 *a* and *b*) in order to facilitate the speed of application. Two or three holders are necessary to avoid delay. The method of applying the clips and their removal just preceding the suture of the galea may be noted in figure 4. The scalp is compressed laterally to the incision during the application of the clips just as it is when pointed forceps are used.

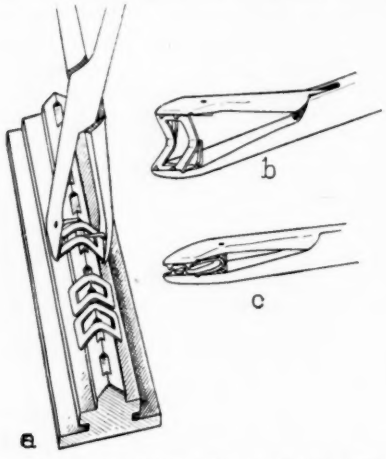


Fig. 2.—*a*, loading clips in holder from racks; *b*, position of clip held in holder, and *c*, position of clip when compressed.

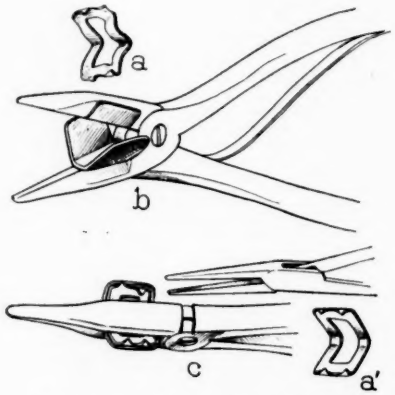


Fig. 3.—*a* and *a'*, scalp clip before and after reshaping; *b*, reshaping forceps, and *c*, scalp clip reshaped and held in place while teeth are adjusted with pointed forceps.

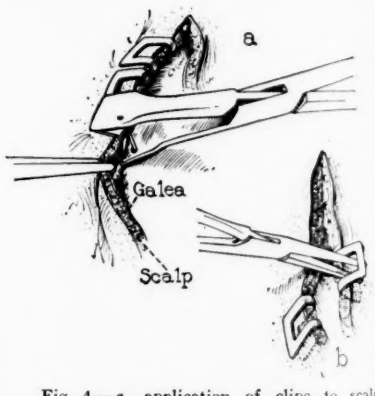


Fig. 4.—*a*, application of clips to scalp for hemostatic purposes, and *b*, removal of clip with pointed forceps preliminary to suture of galea with interrupted silk sutures.

The application of pointed forceps to the galea has been almost universally used, and would be the ideal method for hemostasis of the scalp were it not for the fact that the wound is filled with instruments which are constantly in the way. The end forceps of a group often pull loose from the galea, and occasionally the weight of the forceps pulls the scalp loose from the bone flap.

The perplexing problems of hemostasis and the loss of time in opening and closing wounds in the cranium stimulated one of us (Adson) to devise a hemostatic scalp clip. The technic of application and reshaping of the clip for future use was developed by both of us. The Mischel skin clip had been used, but we found it too narrow and not large enough to include

The hemostatic scalp clip has controlled bleeding, shortened the time of operation, reduced the number of instruments in the wound, and avoided trauma and sloughing of the edges of the scalp.

From the Section on Neurologic Surgery, the Mayo Clinic.

SUBMUCOUS LIPOMA OF THE CECUM

H. R. DeLUCA, M.D., BRIDGEPORT, CONN., AND PHILIP HENSTELL, M.D., NEW HAVEN, CONN.

This case is presented because of its infrequent occurrence.

F. R., a white woman, aged 45, admitted to St. Vincent's Hospital, Bridgeport, Conn., April 10, 1932, complained of sharp pains in the epigastrium which were intermittent, belching of gas, nausea, and a sour taste in the mouth. She stated that she had never vomited.

She had been operated on fifteen years before for a ruptured ectopic pregnancy. Recovery was good. Eighteen years before, she had had malaria. Otherwise her past history was negative.

The present condition began about four months before admission with a dull ache in the epigastrium and a sour taste in the mouth. This ache gradually became worse and finally sharp pain was experienced which was intermittent in character. Although at first the pain was confined to the epigastrium, it later radiated to the lower right quadrant. The pain had no definite relation to food; however, she felt nauseated whenever the pain was present but never vomited. About two months before admission, she noticed a lump in the upper right quadrant just beneath the skin. About that time the pain seemed to subside for a few days but then returned with increased severity. The day before admission the pains became so severe that she was told that she had an acute appendicitis.

On admission, the patient looked very ill and complained of the severe pain in the epigastrium, which radiated to both sides of the lower part of the abdomen. She was nauseated and had a sour taste in her mouth. The temperature was 99.8 F. by rectum, the pulse was 88 and respirations were 22. On examination, the head and neck were essentially normal, as well as the chest, heart and lungs. The blood pressure was 156 systolic, 88 diastolic. The abdomen was round, obese and soft with no rigidity; there was tenderness in the lower part on both sides, but particularly in the lower right quadrant. The scar from the operation of fifteen years before was visible in the lower midabdomen. In the upper right quadrant of the abdomen was felt a mass about the size of a small orange, which was smooth and firm and moved with deep inspiration; it was not tender and appeared to be attached to the under surface of the liver. The extremities and the skin were normal.

Laboratory examinations showed: hemoglobin, 35 per cent; red blood cells, 1,850,000; white blood cells, 7,200; polymorphonuclears, 82 per cent; small mononuclears, 12 per cent; large mononuclears, 6 per cent. Analysis of the urine was negative; of the feces, negative for blood.

Because of the results of clinical and laboratory examination, operation was postponed for further study of the case. Cystoscopy and pyelograms showed normal kidneys, ureters and bladder. A cholecystogram showed a normal gallbladder. Roentgen examination of the colon by a barium enema revealed no obstruction to the passage of the barium until it reached the first portion of the transverse colon, where it stopped at a dilatation of the bowel. After one hour a small amount entered the hepatic flexure, where there appeared to be marked infiltration of the wall and canalization with dilatation of the transverse colon. The opinion of the roentgenologist was that there existed a malignant growth causing an obstruction.

Although up to admission the patient had never vomited and had been having good bowel movements with the aid of laxatives, she had no bowel movements in the hospital and began to vomit small amounts of green fluid three days after admission. Colonic irrigations were given with poor results. Her breath took on a foul odor. She began to complain of severe pains all over the abdomen and in the upper part of the back. The temperature, pulse and respirations rose slightly. She received daily subcutaneous infusions of saline solution and dextrose until the operation. The preoperative diagnosis was carcinoma of the ascending and transverse colon.

Operation was performed nine days after admission by Drs. William Verdi and Daniel Banks. The incision was made on the right side of the abdomen. The cecum was found high up on the right, and a large mass was palpated in the wall near the ileocecal valve. The appendix was normal. No metastases were found. The cecum, the ascending colon and a part of the transverse colon were resected in one piece and then the ileum was anastomosed to the transverse colon. Postoperative diagnosis was carcinoma of the cecum and the ascending colon.

Pathologic examination revealed a large mass 2 inches (5 cm.) in diameter in the cecum arising in the wall just above the ileocecal valve and occluding the lumen. The mass was composed of fatty tissue and was covered by mucosa. No enlarged lymph glands were found. Microscopic examination of the tissue from this mass showed a loosely combined connective tissue interspersed with lipoid tissue, and necrosis was present. The mucosa covering showed signs of pressure atrophy. No malignant growth was found. The pathologic diagnosis was submucous lipoma of the cecum.

The patient made an uneventful recovery and was discharged, May 8, twenty-eight days after admission, fully recovered. The blood count, on discharge, showed hemoglobin 65 per cent and red blood cells 2,000,000.

COMMENT

Of the 181 cases of lipoma of the gastro-intestinal tract reported by Comfort[1] in 1931, only 16 were in the cecum alone; of these 16, 12 were with symptoms and 4 without symptoms. The symptoms present usually consisted of appendicitis or even obstruction. Consequently, the two conditions most usually confused with cecal lipoma are appendicitis and carcinoma. The case presented gave features simulating both conditions, and at times both conditions were suspected. However, the true nature of the lesion was not established until the specimen was seen by the pathologist; but rarely, if ever, is a correct diagnosis made before operation. To confuse submucous lipoma of the cecum with appendicitis is not a very serious mistake, but the confusion arising out of the fact that a malignant growth is suspected often leads to a large amount of unnecessary surgery and the subjection of the patient to an unwarranted risk.

The case presented illustrates all the characteristic features of a lipoma of the cecum. With an understanding of the physiology of this region, it is no wonder that the early symptoms of which the patient complained were those simulating appendicitis. The epigastric pain with later radiation to the lower right quadrant led to the diagnosis of appendicitis, with admission to the hospital for this complaint. The presence of a mass in the upper right quadrant of the abdomen with the negative laboratory data soon pointed away from this diagnosis. A barium enema was then given because malignancy was suspected on the basis of the mass. Conditions found on roentgen examination as a result of the enema were characteristic of intestinal obstruction due to a tumor in this region. The picture, however, was still further confused by the abnormally high cecum, which was up under the liver. Soon after the enema was given, symptoms of intestinal obstruction, with vomiting, increase in the vital signs and the aggravation of the pain in the abdomen developed. However, the signs of obstruction were by no means of a severe grade. The combination of a history of appendicitis with the subsequent development of the signs of intestinal obstruction might be taken as the clinical picture of an obstructive lesion of the cecum. It is to be differentiated from appendicitis by the negative examinations other than the abdominal pain and the appearance of intestinal obstruction. It is to be differentiated from a malignant growth of the cecum by the fact that malignancy does not yield a history of epigastric pain radiating to the lower right quadrant. By this complex of symptoms the clinical picture of benign lesions of the cecum, even though rare, may be perhaps split off from the large group of conditions that yield symptoms referable to this region and be diagnosed more frequently.

Another interesting feature of this case was the relatively severe grade of secondary anemia that was present. The hemoglobin on admission was 35 per cent and the red blood count 1,850,000. It is well recognized among clinicians that lesions involving the ileocecal region have a marked tendency to the production of severe secondary anemia. The explanation of this fact, however, has not received the attention it deserves. Coon of the Mayo Clinic, in a study of malignant growths in this region, came to the conclusion that the degree of anemia present correlated with the degree of intestinal obstruction. This is evidently not so, as in the case presented there was no obstruction of any great importance either in the history or during the course of the patient's illness in the hospital. The

1. Comfort, M. W.: Submucous Lipomata of the Gastro-Intestinal Tract, Surg., Gynec. & Obst. **52**: 101-118 (Jan.) 1931.

cause of this type of anemia must lie in a functional disturbance in this region; but the physiology of the region is as much a mystery as the fact that these patients should develop a severe secondary anemia at all.

47 Kensington Street.

ARTERIOVENOUS FISTULA OF THE LEFT INTERNAL CAROTID ARTERY AND JUGULAR VEIN

D. R. McINTYRE, M.D., SHREVEPORT, LA.

R. H., a white man, aged 54, an American lawyer, consulted me, March 6, 1933, complaining of a blowing, pumping, steam-like noise in the left ear, together with extreme nervousness, anxiety, headache and easy fatigue.

The noise in his left ear began in February, 1928, with a sudden onset while he was at ease reading in his library. Having just recovered from otitis media in the right ear, he first thought that possibly a like condition was making its appearance in the left ear. He consulted an ear specialist but a pathologic condition was not found. There had been no noticeable change in the noise heard, but he had progressively become more uneasy about his condition until he had reached the stage bordering on a nervous breakdown.

The patient was well developed and fairly well nourished. On examination there was some swelling on the left side, and the external veins of the face on that side appeared congested; palpation revealed nothing. There was no abnormal pulsation but on auscultation a blowing, pumping, hissing-like noise, very similar to that heard over an aneurysm, could be heard extending upward from below the tip of the mastoid process to the top and right side of his head. The blood pressure at the first examination was 180 systolic, 90 diastolic; the heart appeared normal. There was no history of syphilis; the blood and urine were normal. The patient was instructed how to promote collateral circulation through the circle of Willis and also advised concerning rest and diet so as to lower his blood pressure. In March, at the first examination, he could stand for the circulation to cease by pressure over the left internal carotid less than ten second. By repeated and frequent efforts, after three months, he is now able to withhold the circulation by pressure more than three minutes, and he appears to be much improved physically as well as mentally. The blood pressure is now 135 systolic, 85 diastolic.

This case is reported because of the extreme rarity of an arteriovenous fistula, especially in this region; also, because there is no history to account for its occurrence. If the collateral circulation continues to improve, ligation of the carotid artery will be done.

528 Ricou-Brewster Building.

CONGENITAL STENOSIS OF THE PYLORUS: TWO CASES

CHARLES E. TRIBBLE, M.D., NEW HAVEN, CONN.

I am placing on record a report of multiple cases of pyloric stenosis occurring in the same family. Other instances of this occurrence have been reported by Freund,[1] Grissen,[2] Heubner,[3] Rosenhaupt,[4] Ibrahim,[5] Still,[6] Finkelstein,[7] Richter,[8] Sauer,[9] Davis,[10] Moore[11] and Caulfield.[12]

There are three children in the family which came under my observation. The patients were the first and last born; the second child passed through infancy without any gastro-intestinal trouble. The first child came under observation in the New Haven Hospital at the age of 8 weeks. He had been vomiting for five weeks. In the hospital, projectile vomiting occurred after all feedings, peristaltic waves were visible over the stomach, and a hard rounded mass was palpable just to the right of the epigastrium. A Fredet-Rammstedt operation was performed at the end of the third hospital week; recovery was satisfactory. Now, at the age of 5 years, the boy is in excellent health.

The third child vomited frequently during the first five weeks of life; at first, the vomiting was not projectile but later it became so and the patient was admitted to the New Haven Hospital at the age of 5 weeks. On examination, large, slow peristaltic waves were seen over the stomach, and there was a rounded tumor at the location of the pylorus. At the end of ten days a pyloroplasty was performed. The child did well and at the age of 6 months is a fat active baby, free of any gastro-intestinal symptoms.

330 Cedar Street.

From the Department of Pediatrics, Yale University School of Medicine, and the Pediatric Service of the New Haven Hospital and Dispensary.

1. Freund, W.: Mitt. a. d. Grezgeb. d. Med. u. Chir. **11:** 309, 1903.
2. Grissen, H.: Deutsche Ztschr. f. Chir. **75:** 107, 1904.
3. Heubner, O.: Therap. d. Gegenw. **8:** 433, 1906.
4. Rosenhaupt, H.: Wien. klin. Wchnschr. **20:** 1160, 1907.
5. Ibrahim, J.: Ergebn. d. inn. Med. u. Kinderh. **1:** 208, 1908.
6. Still, G. F.: Common Disorders and Diseases of Childhood, London, Oxford University Press, 1920.
7. Finkelstein, H.: Lehrbuch der Säuglingskrankheiten, Berlin, Julius Springer, 1921.
8. Richter, H. M., in Abt, I. A.: Pediatrics, Philadelphia, W. B. Saunders Company **3:** 453, 1924.
9. Sauer, L. W.: Arch. Pediat. **41:** 145 (March) 1924.
10. Davis, H. H.: Congenital Hypertrophic Pyloric Stenosis in Twins, J. A. M. A. **83:** 686 (Aug. 30) 1924.
11. Moore, H. L.: South. M. J. **17:** 187 (March) 1924.
12. Caulfield, E. J.: Familial Incidence of Pyloric Stenosis, Am. J. Dis. Child. **32:** 706 (Nov.) 1926.

Special Articles

REPORT OF THE AMERICAN COMMITTEE ON OPTICS AND VISUAL PHYSIOLOGY

The work of this committee is seriously hindered by the difficulty of getting its members together for adequate discussion of the subjects brought to its attention. A meeting has been held in connection with the annual meeting of each of the national organizations that have joined in forming the committee. But these meetings, held in different parts of the country, cannot be attended by all the members and can secure only inadequate time for their discussions.

At the meeting held in connection with the meeting of the American Ophthalmological Society in Washington, May 9, 1933, certain suggestions with reference to lenses were discussed and were placed before the American Ophthalmological Society in the following report:

1. A great number of claims made by the manufacturers advertising various patented and copyrighted lenses, accepted by reputable lay and scientific journals, are absurd.

For the protection of the patient, therefore, it is the duty of the ophthalmologist to be well enough acquainted with the fundamental facts specifically to state in each prescription the exact coflexure of the lenses; in the case of the presbyope, whether two pairs of glasses, or bifocals, are desired, and the particular style or type of bifocals, and the shade and color of tinted glasses, so that the designation can be made in a scientific manner and not by trade names.

When tinted glasses are necessary for certain purposes, London Smoke Nos. 1, 2 and 3 are better than many that are said by their makers to perform miracles. Too much ado has been made about "glare." The "soft light" of a cathedral is a poor light for ordinary purposes.

2. The committee recommends that the scope of the Council on Pharmacy and Chemistry of the American Medical Association be extended to include spectacle lenses, instruments, appliances or drugs pertaining to ophthalmology; if it cannot be otherwise arranged, that this council be given authority to designate the person or persons to pass on the merits of such articles.

The cooperation promised last year, on behalf of the Council on Physical Therapy of the American Medical Association, does not seem adequate to meet the situation with regard to the prescription and advertising of lenses. Lenses, like medicines, may be of secret composition and be sold and advertised under copyrighted names, conditions that favor deceit and fraud that essentially constitute quackery. An appeal from this section should have weight with the Council on Pharmacy and Chemistry.

From the Department of Psychology of the University of Michigan, those who have undertaken the study of visual acuity have been able only in the last year to perfect their apparatus

and work out methods of study. With this progress they hope at an early date to report important scientific results.

The National Society for the Prevention of Blindness calls attention to the effort of the Committee on Central Statistics of the Blind to prepare a Table for the Uniform Grouping of the Blind by Amount of Visual Perception. They have proposed four groups for the blind:

1. "Totally blind," including from no light perception to 2/200.
2. "Motion and form perception," from 2/200 to 5/200.
3. "Traveling sight," from 5/200 to 10/200.
4. "Ability to read large letters," from 10/200 to 20/200.

And "borderline cases," vision of 20/200 or better.

Your committee feels that such grouping could not help the understanding of the disability of blindness and that the matter should receive careful consideration from ophthalmologists in general, before any such plan of grouping is promulgated.

For the Committee,

EDWARD JACKSON, Chairman.

REPORT OF COMMITTEE ON COMPENSATION TABLES FOR EYE INJURIES

Your committee has continued its activities during the last year and is pleased to report increasing use of the method advocated by it for determining the visual efficiency of an individual following industrial injury or occupational disease of the eyes.

In reply to a letter of inquiry directed to the International Association of Industrial Accident Boards and Commissions of the U. S. A., as to the uniformity of methods for evaluating visual efficiency following ocular injuries or occupational diseases, and as to how many boards and commissions utilized the American Medical Association committee's methods, the secretary replied (in part):

"Except in states where compensation for specific injuries is written into the statutes, I think all the states compute partial permanent (disability) on a percentage of total permanent (disability), and this would apply to eye injuries as far as I know.

"Economic blindness is construed as total permanent disability by a majority of the industrial commissions; in fact, by all of them, so far as I know, unless specific weighting is written into their statute.

"There has not only been a tendency to adopt the recommendation made by the Section on Ophthalmology of the American Medical Association in determining visual efficiency, but, so far as I know, it has in practice been adopted by every state where a specific weighting is not written into the statute."

CORRESPONDENCE WITH WORKMEN'S COMPENSATION BOARDS

On March 28 and 29, 1932, the Bureau of Legal Medicine and Legislation, American Medical Association, sent fifty-three letters to the several workmen's compensation boards in the United States. Each board was asked to state whether the method approved by the American Medical Association for the appraisal of visual efficiency had been adopted by it, and, if so, the date of adoption. Each board was asked for criticisms and suggestions with respect to the method, based on the board's experience with it. Twenty-six replies were received. The following is an analysis of these replies:

Officially Adopted

Arizona	Nov. 3, 1925
North Carolina	Jan. 1, 1931
Tennessee	June 1, 1928
Washington	March 17, 1931

From the state of Kansas a rating sheet was received that indicated that that state used the standards set forth on page 3 of the American Medical Association's pamphlet "Appraisal of Loss of Visual Efficiency," but correspondence indicates that Dr. Gradle found variations between the Kansas method and the American Medical Association's method.

Use but Have Not Officially Adopted

Maine, Texas and Vermont. Hawaii uses a part of the American Medical Association's method, but the laws of the territory make the adoption of the method in its entirety impracticable.

Use Similar Methods

Colorado, Ohio and West Virginia

Approve

Wyoming. There is no statement, however, whether the workmen's compensation board does or does not use the method.

Disapprove

California

Do Not Use

Alabama
Connecticut
Idaho
Indiana
Iowa
Michigan
Minnesota
New Hampshire
New Jersey
New York
North Dakota
Utah

COMMENTS

The following comments received from the several states may help throw light on the extent to which the American Medical Association's method is in use and some of the reasons why it is not more extensively used:

Alabama and New Hampshire have no industrial commissions.

In Michigan the laws make the adoption of the American Medical Association's method impracticable.

New York uses a radically different method, and correspondence suggests that the American Medical Association's method is not approved.

New Jersey reported that it was unfamiliar with the American Medical Association's method, and it requested information concerning the method.

Idaho and Minnesota stated that they did not use the American Medical Association's method, but did not state what method they did use.

Connecticut and North Dakota rely on the Snellen tests.

Indiana and Iowa have no particular method but go on the testimony of physicians.

Utah uses the Chapman table.

On April 26 and 27, 1932, the Bureau of Legal Medicine and Legislation sent to thirty-seven insurance companies likely to be interested in the appraisal of the loss of visual efficiency letters inquiring whether these companies had adopted the American Medical Association's method and asking for criticisms and suggestions of that method, if it had been adopted. Replies were received from eleven companies. Of these eleven companies, the following favored the American Medical Association's method:

Aetna Casualty and Surety Company.
General Accident and Assurance Corporation, Ltd.
London Guarantee and Accident Company.
Lumbermen's Mutual Casualty Company.
Maryland Casualty Company.
Metropolitan Casualty Insurance Company.
National Life and Accident Insurance Company.
Union Indemnity Company.

The Travelers Insurance Company reported that it found the Snellen test more widely adopted.

The American Mutual Liability Insurance Company adopts the methods of the various state industrial commissions.

The Lloyd Casualty Company was unwilling to express an opinion.

Through the untiring efforts of one of the members of the committee, Dr. H. S. Gradle, the committee has succeeded in having the American Medical Association produce the Industrial Visual Acuity test charts for distance and near. The distance charts conform to the Snellen formula, i. e., characters subtending a 5 degree angle, and the component parts subtending a 1 degree angle at the distance from 200 feet to 20 feet to determine a visual efficiency for distance, and the near charts for 14 inches. These, with a pad of the Industrial Visual Field Charts and the Industrial Motor Field Charts recommended by the committee, may be obtained from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The committee asks for its continuance as an active working body of the Section on Ophthalmology.

Respectfully submitted.

HARRY S. GRADLE.
ALBERT C. SNELL.
NELSON M. BLACK, Chairman.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

HOSAL AND BROMHOSAL NOT ACCEPTABLE FOR N. N. R.

Hosal and Bromhosal are products marketed by the Abbott Laboratories as "Two Substitutes for Table Salt where Sodium Chloride is contra-indicated." No adequate statement of composition is given in the advertising or on the package. The only analysis available appears to be that given for Hosal by von den Velden (The Low Salt Diet, *Clin. Med & Surg.* **39**:257 [April] 1932) as follows:

	Per Cent
Calcium	11.7
Sodium	15.3
Magnesium	traces
PO_4	
Poly-amino-acids	
Low fatty acids, amounts not specified	

Concerning the composition of Bromhosal, von den Velden states: "Bromhosal is a 60 per cent bromine preparation on the basis of Hosal, composed of calcium-sodium double salts of poly-amino-acids on the one side and low fatty acids on the other." Thus, as far as the advertising and labels of the product marketed by the Abbott Laboratories are concerned, the preparations are at best semisecret.

HOSAL

The advertising emphasizes the idea that "It [Hosal] contains only a minute quantity of sodium, and is free from sodium-chloride." Ordinary table salt contains 39.6 per cent of sodium, and according to the von den Velden analysis, Hosal contains 15.3 per cent of sodium. The latter, therefore contains 39.2 per cent of the sodium contained in table salt; hardly to be spoken of as "a minute quantity." The misleading statement must be regarded as harmful in view of the well established fact that sodium, rather than chlorine, is important for the production of edema.

An associate of the Council's referee and two assistants performed some organoleptic tests to determine the flavor imparted to food by Hosal and the amount necessary to produce the desired degree of salinity in comparison with table salt. There was agreement that the flavor imparted to foods by Hosal was distinctly different from that of table salt and that the flavor was unpleasant, resembling somewhat the flavor of meat extracts. All of them found that the flavor was too unpleasant to push it to the degree of salinity to which they were individually accustomed. It was found that approximately 50 per cent more of Hosal than of table salt had to be used to produce any definite salinity. The referee's associate reported: "It may be pointed out that indiscriminate regulation of the salt intake loses sight of the fact that the electrolyte pattern constantly shifts in nephritis and that very frequently actual deficiencies of base make such restrictions inadvisable and even dangerous." The referee's associate added that a colleague has used potassium chloride in long standing cases of nephrotic edema and finds it extremely satisfactory, cheap, and without harmful effects over long periods. He quoted Peters' statement (Salt and Water Metabolism in Nephritis, *Medicine* **11**:435 [Dec.] 1932): ". . . the regulation of the sodium chloride intake is not a matter for routine prescription but one that requires the most critical consideration in each individual case."

BROMHOSAL

The advertising circular states that "Bromhosal consists of 60 per cent bromine chemically combined with Hosal . . ." The misleading statements with regard to the absence of sodium chloride apply, therefore, to both products. The associate of the Council's referee reported that Bromhosal is definitely more palatable and saltier than Hosal. But he pointed out that the product is proposed not as a *salt substitute*, but as a *medication*. The advertising circular states: "Bromhosal is of value in all cases in which specific bromide therapy is indicated, particularly in epilepsy and epileptoid states, and in the numerous diseases in which a depression of psychic excitation is desired. In certain vasomotor disturbances, and in insomnia and the psychic irritations during the menopause and menstrual periods, Bromhosal has proved of value." The product is therefore offered as a substitute for the official bromide preparations such as sodium or potassium bromide, which cost far less, without any evidence of advantage over these salts. It is the opinion of a neurologist who is an associate of the Council's referee that but little if any evidence of therapeutic superiority exists. It is pointed out that if sodium is not desired in bromide therapy, as in nephritics with edema, the official potassium bromide can be used. The referee's associate further pointed out that Bromhosal represents a mixed, and probably undesirable, type of therapy, since it combines the question of bromide therapy with that of the salting of food. It puts on the tables of patients a drug which is likely to escape the attention of the physician for long periods of time, whereas he is much more likely to check up on the medication if he has had to make out a prescription for the official preparation, which is entirely adequate for bromide therapy.

After careful consideration of the referee's and associate's comments, the Council declared Hosal unacceptable for New and Nonofficial Remedies because it is a preparation of semisecret composition marketed with misleading and unwarranted claims; it declared Bromhosal unacceptable because it is a preparation of semisecret composition marketed with misleading and unwarranted claims as a potentially dangerous substitute for bromide therapy with the entirely adequate official preparations.

LA MERCY MINERAL WATER NOT ACCEPTABLE FOR N. N. R.

La Mercy Mineral Water was presented by McKesson & Robbins, Inc., for consideration by the Council as a natural product from thermal springs at Los Banos, Calif., proposed for therapeutic use in the treatment of dysmenorrhea. The firm submitted a detailed analysis on the basis of which the following "Hypothetical Form of Combination" was declared:

	Grains Per U. S. Gallon
Ammonium Chlorid (NH_4Cl)	0.79
Lithium Chlorid ($LiCl$)	Trace
Potassium Chlorid (KCl)	0.50
Potassium Bromide (KBr)	0.09
Potassium Iodine (KI)	0.16
Sodium Chlorid ($NaCl$)	121.83
Sodium Tetraborate ($Na_2B_4O_7$)	4.08
Disodium Arsenate (Na_2HAsO_4)	....
Calcium Phosphate ($Ca_3(PO_4)_2$)	0.04
Magnesium Carbonate ($MgCO_3$)	0.29
Calcium Carbonate ($CaCO_3$)	0.27
Calcium Sulphate ($CaSO_4$)	0.41
Calcium Silicate ($CaSiO_3$)	3.58
Silica (SiO_2)	2.60
Iron Oxide (Fe_2O_3)	0.01
Alumina (Al_2O_3)	0.10
	136.75

Anticipating an objection to the name, the firm offered to market the product under any name that would meet the Council's requirement. The firm was informed that the name "La Mercy Mineral Water" is objectionable and that the Council would recognize either "Banos Mineral Water" or "McKesson Saline Mineral Water" as a suitable name.

In its presentation of the product, the firm admitted that scrutiny of the analysis would furnish no reason to believe that the product should have any specific influence on the pain or asssociated pains of dysmenorrhea, amenorrhea or the menopause, but it submitted 430 case reports as clinical evidence for the therapeutic value of the product in "Primary Dysmenorrhea, Complete Retroversion Infantile Uterus, Amenorrhea, Menorrhagia, Metrorrhagia, Endometritis, Neurasthenia, Fibroid Tumor, Cervical Erosion, Ovaritis, Salpingitis and Menopause."

The Council's referee examined the case reports and also submitted the material to a colleague who is an experienced gynecologist. Among the cases reported are forty-five cases treated by Dr. A. V. Pettit of San Francisco, the list of diagnoses of which includes, according to Dr. Pettit's statement, patients "who have many of the recognized causes of dysmenorrhoea such as acute flexions of the uterus, the infantile or under-developed uterus, patients having small intramural benign tumors of the uterus and those having marked disturbances of the blood supply, mainly varicosities of the broad ligaments."

Dr. Pettit further states: "This about covers the field of dysmenorrhoea due to mechanical or physiological pathology." "Of these forty-five patients only two have reported no benefit." "This report must be considered simply a report of what patients say concerning the efficacy of the water." "From a purely scientific standpoint, the number of cases is far too few for the complete working out of the value of this water in the treatment of the various types of dysmenorrhoea. To do this thing properly it would require at least a year or more."

Records of smaller groups of cases by other physicians include cases of fibroids, menopausal symptoms and stenosis of the cervix. A consultant, among other observations, points out that postoperative stenosis of the cervix often is relieved spontaneously: that the complete and permanent relief of dysmenorrheic symptoms arising from infantile uterus is unusual, and that the statement that in one series relief followed in forty-three of forty-five cases, from whatever their cause, raises questions as to the accuracy of the observations attributed to the patients. The statement of the distributors that of 385 cases plus 45 control cases—making 430 cases in all that have been treated—only one has reported no benefit, seems to be a claim that more careful observations are unlikely to confirm. It is likely that moderate water drinking may benefit some patients with dysmenorrhea.

In the discussion of the referee's report, a member of the Council pointed out that there would seem to be no question that the therapeutic claims are unfounded, including as they do recommendations for use in developmental abnormalities, nutritional disturbances and inflammatory conditions of the uterus; it would seem that the La Mercy water would have the effect of a saline mineral water.

The Council declared the product submitted as La Mercy Mineral Water unacceptable for New and Nonofficial Remedies for lack of acceptable convincing evidence for its therapeutic value in the conditions for which its use is proposed.

REX-ORCIN NOT ACCEPTABLE FOR N. N. R.

Rex-Orcin is the proprietary name under which the Amp Research Laboratories, Corona, Long Island, N. Y., market a preparation for treatment of the scalp, stated to have the following composition:

"Tannic acid U. S. P.	0.5%
"Salicylic acid U. S. P.	1.0%
"Castor Oil, U. S. P.	24.5%
"Euresol (Mono acetate resorcinol)	5.0%
"Ethyl alcohol	69.0%

"Perfumed to render suitable for use."

The product appears to be only another one of the many hundreds of proprietary preparations on the market for treatment of the scalp. There is nothing new about the formula. It might be a little more complex than even many of the ambitious formulas on the market, but it can hardly be said that this adds anything to its value, for the opposite is probably the case. Certainly there is no new discovery in this preparation that justifies the proprietary name Rex-Orcin.

Resorcin has been used for years in the treatment of diseases of the scalp. The same is also true of resorcinol monoacetate (introduced as euresol) and of salicylic acid. Tannic acid, on the other hand, is not a common ingredient in this sort of preparation. Just what can be expected from this adjuvant is difficult to state. Of course, the castor oil in the preparation is an old remedy, generally added to alcohol preparations to overcome dryness of the scalp. The directions given on the label are likely to encourage ill advised use of Rex-Orcin by the general public. If it is desired to use such a preparation, it would be far better that the physician write an individual prescription.

Rex-Orcin is offered as "a stimulating and effective antiseptic." If it is rubbed in hard enough, it might cause a rubefacient action on the scalp. No evidence is offered to show that it is an "effective antiseptic for the treatment of hair and scalp." Just what is meant by this last statement only the manufacturers can say.

The Council declared Rex-Orcin unacceptable for New and Nonofficial Remedies because it is an unnecessarily complex and unscientific mixture marketed under an unacceptable proprietary name, with unwarranted therapeutic claims, and in such a manner as to lead to its ill advised use by the public.

Committee on Foods

GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

THE CLAIM "DIGESTS STARCH" FOR FOODS CONTAINING DIASTATICALLY ACTIVE MALT OR MALT EXTRACT

Such claims as "digests starch," "aids digestion," "digests other foods," "digests the starch of other foods," "contains natural digestive elements," and equivalent claims frequently accompany foods containing diastatically active malt or malt extract.

The normal person unaided is able to care for the digestion of foods. Any digestion of starch in ingested foods due to diastatically active malt or malt extract products included with a meal is of no practical significance. Aids of this character for starch digestion are not necessary. Any child or adult can digest starch. Saliva swallowed in eating is many times more potent for digesting starch than is any quantity of food containing malt or malt extract likely to be consumed.

It is not true that foods containing diastase "digest other foods." The diastase is incapable of digesting proteins or fats, important components of most foods.

Diastatically active malt or malt extract products have starch digestive properties, but they are of no significance for digesting starch or for aiding the normal processes of starch digestion. Starch digestive claims in advertising for this type of foods usually have therapeutic or medicinal implications which lead to self-medication and are unwarranted; they promote misleading advertising.

VAGUE "CLINICAL EXPERIENCE" CLAIMS

Vague claims such as "clinical experience with *XYZ* has demonstrated its efficiency" and equivalent claims for foods are not informative to the public or physicians and because of misleading therapeutic implications are objectionable. Such claims should state what clinical experience with the foods has demonstrated; they should be supported by actual experience of physicians. Claims regarding clinical experience are justified only if specific and supported by sufficient evidence. Vague claims in general are not instructive and lead to deceptive advertising.

Claims of clinical experience cannot be based on replies to general questionnaires promiscuously distributed to physicians. Information and data so obtained cannot be rated as the results of clinical experience. In this connection see the General Committee Decision "Questionnaire Advertising."

ADDITION OF PHENOLPHTHALEIN, ACETYLSALICYLIC ACID (ASPIRIN) AND OTHER DRUGS TO CHEWING GUM, CANDY AND FOOD ARTICLES

Medicating common food articles with drugs—such as the addition of phenolphthalein to chewing gum, acetylsalicylic acid (aspirin) to candy, and senna to bread—is becoming a growing menace and must be viewed with apprehension and concern as a danger to public health. The general appearance of these drugged foods does not distinguish them from the respective nondrugged forms; label declaration of the added drugs cannot be expected to prevent their fortuitous misuse or their consumption by the uninformed, the unobservant or those unable to recognize the significance of label statements. There is, therefore, the ever present likelihood that children and even adults may unsuspectingly or ignorantly consume such drugged foods with results that may be disastrous.

The addition of drugs to common foods tends to promote indiscriminate self-medication and is to be unqualifiedly condemned as a menace to public health. The preparation of medicines with confections, such as sugar or chocolate, as a

device for making unpalatable drugs more acceptable to the patient is quite a different matter from the addition of drugs to articles of food that are bought by the public without restriction. This ruling, therefore, has no reference to so-called candy medications prescribed by a physician and taken under his directions.

"TRICK" CLAIMS IN FOOD ADVERTISING

Claims in food advertising implying for the food advertised the merits of something more valuable (such as milk) with which it may be admixed for use are of the nature of "trick" advertising. These claims are so constructed grammatically as to connect the stated values with the advertised food, whereas such values in large part are provided by the other products of the mixture. This "trick" grammatical structure is illustrated by the statement: "*XYZ* made with hot milk is not only delicious but nourishing. It is rich in the proteins, fats, carbohydrates and minerals children should have." The antecedent of "it" is *XYZ;* the grammatical structure incorrectly makes *XYZ* the source of the fats, carbohydrates, minerals and proteins children should have. Claims of this character to all appearances are planned to "trick" the reader. Such a statement as "the mixture of *XYZ* and milk is rich in proteins, fats, carbohydrates and minerals (calcium and phosphorus)" is correctly informative and satisfactory but should be used in such a manner as to be free from false connotations.

Food advertising should be truthful in statement and by implication. "Trick" advertising and all other misleading forms are harmful to food advertising and merchandising generally.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CURTISS OSTRICH EGG CANDY

Manufacturer.—The Curtiss Candy Company, Chicago.

Description.—Sweet chocolate enrobed candy containing corn syrup, sucrose, gelatin, glycerin, tapioca starch, vanillin and coumarin.

Manufacture.—The ingredients in definite proportions are whipped to a viscous consistency and transferred by machine to "starch molds"; when firm, the molded pieces are mechanically removed, automatically enrobed with sweetened chocolate, cooled and wrapped.

Analysis (submitted by manufacturer).—

	per cent
Moisture	7.0
Ash	0.3
Fat (acid hydrolysis method)	12.2
Protein (N × 6.25)	2.1
Reducing sugars as dextrose	15.3
Sucrose (copper reduction method)	32.5
Crude fiber	0.0
Carbohydrates (by difference)	78.0

Calories.—4.3 per gram; 122 per ounce.

TOPS-ALL FLOUR (BLEACHED)

Manufacturer.—Minneapolis Milling Co., Minneapolis, of the Commander Larabee Corporation.

Description.—A strong hard spring wheat "stuffed straight" flour; bleached.

Manufacture.—Selected hard spring wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (1.8 Gm. per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (½ ounce per 196 pounds).

Claims of Manufacturer.—For commercial bread bakeries.

LARSEN'S PRUNES (STRAINED-UNSEASONED) FLAVORED WITH LEMON JUICE

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved prunes flavored with lemon juice, prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of prunes. No added sugar or salt.

Manufacture.—Dried prunes are inspected for removal of any undesirable material, thoroughly washed and steamed until soft; the pits are removed; the prune pulp is sieved in steam atmosphere, is adjusted to a desired consistency with a small amount of water and lemon juice to produce a citric acid content of 0.5 per cent in the final product, is heated to 82 C. and automatically filled into washed cans, which are sealed and processed for thirty minutes at 100 C.

Analysis (submitted by manufacturer).—

	per cent
Moisture	77.0
Total solids	23.0
Ash	0.7
Salt (NaCl)	0.1
Fat (ether extract)	0.1
Protein (N × 6.25)	0.9
Crude fiber	0.6
Carbohydrate other than crude fiber (by difference)	20.2
Titratable acidity as citric acid	0.5

Calories.—0.9 per gram; 26 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

HIGHLAND WHEAT BREAD (BLEND OF WHITE AND WHOLE WHEAT FLOURS)

Manufacturer.—Langendorf United Bakeries, Inc., San Francisco and Seattle.

Description.—White flour and whole wheat flour bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from white flour, water, whole wheat flour, sucrose, shortening, salt, powdered skim milk, yeast, molasses, a yeast food containing buttermilk, calcium phosphate and ammonium tartrate, malt extract syrup and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.0
Ash	1.9
Fat	4.0
Protein (N × 5.7)	11.2
Reducing sugars as invert	4.5
Sucrose (copper reduction method)	0.1
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	45.1

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—Prepared from a mixture of white and whole wheat flours.

GERBER'S STRAINED VEGETABLE SOUP

Manufacturer.—Gerber Products Company, Fremont, Mich.

Description.—Strained cooked peas, carrots, spinach, rice and barley flours, beef, tomatoes, and celery retaining in high degree the natural vitamin and mineral values; the coarser fibrous material is removed. No added seasoning or sugar. The vegetables are canned in season without salt or sugar, and at intervals are combined with the other ingredients and strained.

Manufacture.—The vegetables are grown from selected seed under the supervision of trained field men, harvested at the proper state of maturity, and immediately washed, drained and inspected. They are not blanched, thus avoiding loss of nutrients. The ingredients are heated under steam pressure until sufficiently softened in an atmosphere of steam and handled thereafter in a closed system and are not exposed to the air. The material is forced through a strainer of perforated monel metal, pumped through enameled metal tubing to glass lined vacuum tanks where in the practical absence of oxygen and at a low temperature the water content is adjusted to produce a uniform consistency in the finished product. The special equipment and procedure have been developed to protect vita-

min values which otherwise may be destroyed or seriously reduced. The product is automatically filled into hot water and steam washed cans which are immediately sealed (the air exposure is for less than one-third second) and processed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	89.9
Total solids	10.1
Ash	0.3
Fat (ether extract)	0.1
Protein (N × 6.25)	1.9
Reducing sugars before inversion (as invert)	0.6
Sucrose (copper reduction method)	0.3
Starch (acid hydrolysis method)	4.7
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	7.6

Calories.—0.4 per gram; 11 per ounce.

Vitamins.—The equipment is especially designed to exclude oxygen from the products during the cooking and straining operations, thereby efficiently protecting the vitamins.

Minerals.—All cooking water is retained, thus avoiding loss of minerals or water soluble nutrients.

Claims of Manufacturer.—Prepared for the diets of infants and invalids or for special smooth diets.

ROBIN'S BEST FLOUR (BLEACHED)

Manufacturer.—The Robinson Milling Company, Salina, Kan.

Description.—Hard winter wheat "patent" flour; bleached.

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds).

Claims of Manufacturer.—For bread baking in the home and bakeshop.

NURMI'S EXTRA FINE BREAD

Manufacturer.—Nurmi's Bakery, Fresno, Calif.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, unsweetened skimmed condensed milk, sucrose, lard, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

WHITE HOUSE RICE

Manufacturer.—Standard Rice Company, Inc., Houston, Texas.

Description.—Scoured bran free rice.

Manufacture.—Brown rice as described under White House Natural Brown Rice (THE JOURNAL, May 27, 1933, p. 1689) is friction scoured to remove the bran coating, is passed between a rapidly revolving corrugated cylinder and a stationary corrugated case. The bran that is scoured off passes through the openings of the case and is removed by suction. The scoured rice is passed through a "brush" machine consisting of a revolving leather covered wooden drum enclosed in a vertical wire-covered case through which the polishings pass. The polished rice is passed through wire-covered reels to remove small rice and broken pieces. The prepared rice is heat or electrically treated to destroy insect life and is packed in wax paper cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	11.3
Ash	0.4
Fat (ether extraction method)	0.6
Protein (N × 5.95)	6.1
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	81.3

Calories.—3.6 per gram; 101 per ounce.

Vitamins.—Practically devoid of vitamins.

Claims of Manufacturer.—Not coated with talcum, "glucose" or other coating material.

CLAPP'S ORIGINAL PUREE OF APRICOTS
(CONTAINS SULPHUR DIOXIDE)

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Strained, cooked "sulphured" dried apricots. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—California dried apricots are given three separate washings to reduce the sulphur dioxide. (Tests show that the washing reduces the sulphur dioxide from 2,500 parts per million to less than 100 parts.) The apricots are slightly cooked, strained, filled into glass jars and processed as described for Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

Analysis (submitted by manufacturer).—

	per cent
Moisture	84.7
Total solids	15.3
Ash	1.1
Fat (ether extract)	0.5
Protein (N × 6.25)	0.7
Crude fiber	2.4
Carbohydrates other than crude fiber (by difference)	10.6
Sulphur dioxide	less than 100 parts per million.

Calories.—0.5 per gram; 14 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

LARSEN'S VEGETABLES WITH CEREAL AND BEEF BROTH. STRAINED-UNSEASONED

Manufacturer.—The Larsen Company, Green Bay, Wis.

Description.—Sieved vegetables (carrots, potatoes, tomatoes, peas, beans, spinach) with pearl barley and beef extract; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the raw vegetables. Contains no added sugar or salt.

Manufacture.—With exception of the tomatoes, the vegetables are harvested, immediately delivered to the factory and processed as described for tomatoes (THE JOURNAL, July 1, 1933, p. 35); the tomatoes are regular canned products. The pearl barley is cooked for two hours to a gruel of desired consistency. The vegetables, barley and beef extract in formula proportions are thoroughly mixed, strained, canned and processed for sixty minutes at 116 C.

Analysis (submitted by manufacturer).—

	per cent
Moisture	89.1
Total solids	10.9
Ash	0.6
Salt (NaCl)	0.2
Fat (ether extract)	0.2
Protein (N × 6.25)	1.7
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	8.1

Calories.—0.4 per gram; 12 per ounce.

Vitamins and Claims of Manufacturer.—See Larsen's Strained Tomatoes Unseasoned—Ready for Use (THE JOURNAL, July 1, 1933, p. 35).

TOP-N-OCH BREAD

Manufacturer.—Maddox & Jennings Bakery, Inc., Roanoke, Va.

Description.—White bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from flour, water, condensed whole milk, lard, sucrose, salt, yeast, a mixture of gelatinized white corn flour and soya bean flour, malt syrup, and yeast foods containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, and calcium acid phosphate and calcium peroxide.

SWEET TOOTH SELF-RISING PANCAKE FLOUR

Manufacturer.—Black Brothers Flour Mills, Beatrice, Neb.

Description.—Self rising flour containing "first clear" wheat, white corn and rye flours, calcium acid phosphate, salt, sodium bicarbonate, corn sugar and dry skim milk.

Manufacture.—The ingredients in definite proportions are thoroughly mixed in a batch mixer and automatically packed in paper bags.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Seven dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JULY 22, 1933

PROBLEM OF MEDICAL PATENTS

Recently the question of the desirability of patents of products used in the field of medicine has been hotly debated. The Principles of Medical Ethics of the American Medical Association says specifically, "It is unprofessional to receive remuneration from patents for surgical instruments or medicines." It has been the pride of medicine down the centuries that it gave freely of its discoveries for the benefit of mankind. Jenner's contribution of vaccination against smallpox, Pasteur's method for the control of hydrophobia, Withering's contribution of digitalis, became the property of all who cared to use them for the prevention or treatment of disease.

As the science of medicine developed, however, new elements entered into its work and participated in its endeavors. Physicians began less and less to concoct their own remedies and to depend on the manufacturer of pharmaceuticals for the collection of materials and for their preparation and distribution. In an earlier day the physician who developed new devices or appliances manufactured a few with the aid of some neighboring blacksmith or carpenter. The modern physician is likely to delegate the manufacture to an industry capable of turning out thousands of units, in contrast to the ten or fifteen which might be used formerly. Greater dissemination of medical knowledge creates a greater demand for new drugs and new equipment. Moreover, the situation is complicated by the entrance into medical research of specialties associated with medicine yet not necessarily partaking of the ideals of the medical practitioner. Today the development of a new medicament may involve the participation of chemists, physicists, laboratory technicians, physiologists, biochemists and roentgenologic technicians who may not themselves be concerned at all with the traditions of medicine as a profession. Insulin, for example, was developed by biochemists, physiologists and a practicing physician. Whereas an ethical physician might not derive remuneration from a patent, biochemists or physiologists might do so. Certainly the name of the physician Banting is as much associated with the discovery as those of his colleagues, Macleod, Collip and Best. Finally, if the discoverer fails to patent his discovery, any one else may do so and thus steal both the discovery and the profits. The tremendous advantages of being first in the field with a new medical preparation are well recognized in the pharmaceutical industry.

In a recent issue of *Science*, Dr. Allen Gregg [1] considered particularly the new questions raised by the patenting of products through universities. In order to avoid possible ignominy and recriminations against physicians who might patent medical discoveries, and especially when the work was done under the auspices of and with equipment provided by universities, it has become customary to have such patents taken out in the name of the university, college or research institution and to control and promote the preparations under boards appointed by these universities. Numerous universities now resort to such patenting to obtain money to support further research but also, possibly, with the idea of rewarding suitably the investigators of products used in medicine. Already medical patents are controlled by Harvard, Toronto, Columbia, Cincinnati, Wisconsin, Stanford, St. Louis, and Northwestern universities, by the Mayo Foundation, and by the Scarlet Fever Foundation of the McCormick Institute for Infectious Diseases.

As Dr. Gregg emphasizes, there may be excellent arguments in favor of such patents, yet their operation has already produced innumerable difficulties. Extraordinary jealousies develop between members of the same research staff because of special advantages accruing to those who derive income from patents. A tendency develops to promote new products rather than to examine them critically. The acquisitive desire, inherent in many persons, eventually leads to a psychologic frame of mind described as "royalty crazy."

Vast sums must be accumulated for the protection of patents—to prosecute infringement. Extraordinary secrecy must be maintained, interfering with academic freedom in research. The existence of patents inhibits research on similar products or with the same materials by physicians in practice and by investigators in medical schools and universities. The university, once in the field of patents, as a routine attempts to protect every tiny innovation or result, eventually devoting more time and money to protect old discoveries than is spent on new research or on the studies necessary to determine the actual value of discoveries already made.

Sir Henry Dale,[2] director of the National Institute for Medical Research in London, accepts the medical tradition as embodying the true ideal, since the ultimate aim of medical research is to provide knowledge for the relief, cure or prevention of human suffering. In a

1. Gregg, Allen: Science **77**: 257 (March 10) 1933.
2. Dale, H. H.: Academic and Industrial Research in the Field of Therapeutics, address at the opening ceremony of the Research Laboratory of Merck & Company, Rahway, N. J., April 25, 1933.

recent address he contrasted the work done by physicians in practice and medical investigators in universities with the type of research carried on in the laboratories founded by industry. Sir Henry Dale expressed his conviction that a general use of patents in all parts of the field of therapeutic research would definitely hinder rather than promote progress. He felt that the greatest danger was in connection with a discovery of the biologic type. Particularly was he inclined to regard the medical patent as a peculiarly dangerous weapon when wielded by the good intentions of the academic amateur. The danger in patents in the chemical field did not seem to him so ominous, because only industrial research and vast organizations can make these preparations generally available at low prices. Nevertheless, only clinical trial in the hands of physicians under controlled conditions can ever determine with certainty the real value of any therapeutic product. Hence the development of such products must be a cooperative effort. This fact should not be forgotten by those who administer patents in the medical field.

Our new order of living in the machine age, the development of specialization in medical practice, the incorporation of great industries for the exploitation of laboratory discoveries, and similar factors seem to make necessary some change in the medical point of view concerning medical patents. The control of such patents by universities has to some extent assured standardization of products. Usually only reputable firms capable of developing and exploiting products honestly are granted licenses to participate in the manufacture and sale of products controlled by universities, although there are glaring exceptions. However, as has already been mentioned, there is extreme unevenness in the manner of administration of various patents by the groups involved. Conceivably the best interests would be served if some central body might be developed, wholly altruistic in character, capable of administrating medical patents for the benefit of the public, and assuring a reasonable remuneration to the investigator, the devotion of much of the profit to research, and adequate returns to manufacturers willing to develop quantity production and distribution in an ethical manner. Such a central body might also set up requirements for adequate clinical research in connection with the development of new products, so that premature launching of unestablished products on the medical profession or on the public might be avoided.

In the opinion of the Council on Pharmacy and Chemistry of the American Medical Association, such premature exploitation is exactly what has occurred in relationship to the use of preparations of copper and iron. Leaving aside the question of priority in the discovery and the difficulties involved in preventing physicians from prescribing mixtures of copper and iron should they wish to do so; disregarding the fact that copper occurs as a natural contaminant in practically all iron preparations, and that too in amounts apparently sufficient to bring about the desired therapeutic results, there still remains for debate the question as to whether or not the discovery is of practical value in the field of therapeutics.

The questions here raised must inevitably concern the scientific bodies of the American Medical Association as well as the Judicial Council, the House of Delegates and the Board of Trustees. Perhaps some suitable means will be evolved whereby the American Medical Association may lend its authority and influence to the establishment of a technic for the control of medical patents in the best interest of the public welfare and for the advancement of scientific medicine.

MANIFESTATIONS OF ANOXEMIA

The active cells of the body continually call for oxygen. This element is supplied by the arterial blood, which, in turn, depends on the respiratory processes to replenish its supply. The oxygen pressure in the blood must be sufficiently high to satisfy the bodily needs, if physiologic disaster is to be averted. The physician has long realized that anoxemia may attend hemorrhage and anemias of extreme type, because the oxygen carriers, the red blood cells, have become depleted in numbers or are deprived of their normal content of the respiratory pigment hemoglobin. Diseases of the circulation and of the lungs may bring about anoxemia in other ways. The severe symptoms and fatal effects of extreme deprivation of oxygen are quite familiar; the manifestations of mild oxygen hunger are not so well known, particularly because the body will often react so as to compensate for a diminution in the oxygen supply.

Life at high altitudes, unaided by special supplies of oxygen, involves the possibilities of malaise and disordered functions attributable to the lessened supply of oxygen incident to lowered barometric pressures. This has long been realized in mountain climbing and in balloon ascensions. The conquest of Mount Everest in the Himalayas, involving an ascent of less than 30,000 feet, has been prevented thus far not alone by the geographic and climatic difficulties but also by the problem of the oxygen supply. An altitude of 20,000 feet, without oxygen reinforcements is a possibility for only a few of the sturdiest acclimated persons. The advent of the airplane and the proposals to "fly high" above the clouds in every-day human transport brings the problem of the effects of even moderately lowered barometric pressure and oxygen tension of the air at such altitudes forcefully to the attention.

Several investigations [1] of moment in this connection have recently been conducted in the Department of

1. Van Liere, E. J., and Crisler, George: The Effect of Anoxemia on Hunger Contractions, Am. J. Physiol. **93**: 267 (May) 1930. Crisler, George, and Van Liere, E. J.: The Effect of Anoxemia on the Digestive Movements of the Stomach, ibid. **102**: 629 (Dec.) 1932. Van Liere, E. J.; Crisler, George, and Robinson, Dennis: Effect of Anoxemia on the Emptying Time of the Stomach, Arch. Int. Med. **51**: 796 (May) 1933.

Physiology at the West Virginia University in Morgantown. They extend the importance of studying anoxemia beyond the scope of the familiar diseases. First of all Crisler, Van Liere and their co-workers have demonstrated that even in moderate anoxemia the hunger contractions of the stomach are greatly decreased. The possible relation of this to the sensation of hunger is obvious. Furthermore, there is often a definite inhibition of gastric digestive motility as indicated by a decreased amplitude of stomach contractions and frequently by a fall in tone. Clinicians are, indeed, familiar with an apparent parallelism between gastrointestinal disturbances in the anoxemia of cardiac disease and the effects of anoxemia on gastric digestive motility. Finally, it has been found that, under carefully controlled observation, laboratory animals may show a prolongation of the emptying time of the stomach under anoxemic conditions. At a pressure of 560 mm. of mercury, which corresponds to an oxygen percentage of 15.35 and to an altitude of 8,000 feet, several animals showed a definite retention of food in the stomach. The higher the degree of anoxemia, the greater the prolongation of the emptying time of the stomach. At a barometric pressure which corresponds to an oxygen percentage of about 9.4 and to an altitude of 20,000 feet, food sometimes remained in the stomach as long as twenty-four hours. The altitudes represented by the figures quoted do not exceed the heights often reached in airplane travel. These modern studies of interrelations between mild anoxemia and gastrointestinal functions are therefore timely.

THE "TRACE" ELEMENTS IN NUTRITION

Fifteen years ago, Osborne and Mendel [1] called attention to the paucity of knowledge regarding the mineral nutrients. They asserted that there is no adequate experimental basis whatever to permit tenable statements regarding the indispensability or even the minimum requirement of any of the inorganic constituents of the dietary with the possible exception of calcium and phosphorus. A recent essay by Mary Swartz Rose [2] on the nutritional significance of some mineral elements occurring as traces in the animal body again points out that for many years interest in the study of the mineral elements in relation to nutrition was temporarily overshadowed by the evidence of organic factors potent in growth; namely, the vitamins. The significance of iodine in small amounts had, of course, been realized since the beginning of the century, following Baumann's discovery in 1895 that the element is a regular constituent of the thyroid gland. Investigation as to the occurrence and possible function of "trace" elements in both plant and animal life is now exceedingly active. Boron, zinc and manganese have all been shown essential to the growth of maize; boron to a great variety of dicotyledonous plants; without zinc, wheat and barley die in the early stages of growth, and buckwheat, sunflowers, broad beans and red kidney-beans never come to full maturity or produce seed.

In a book published under the title "The Most Nearly Perfect Food" the authors,[3] describing the importance of milk, point out that it is particularly useful in the diet because it contains all the minerals found in the body. It has calcium, phosphorus, potassium, sodium, magnesium, iron, chlorine, iodine, sulphur and other minerals, in addition to carbon, hydrogen, oxygen and nitrogen. Three of these minerals, calcium, phosphorus and iron, deserve special discussion because of their unusual importance.

The difficulties of investigation are not inconsiderable in any search of "trace" elements in biologic materials. It has been greatly aided in recent years by the use of the spectrograph, which has revealed the ubiquitousness of many elements in the tissues of living organisms. Three extensive reports [4] are now available regarding the components of milk. In view of the fact that the samples examined have come from diverse sources in Europe, Great Britain and the United States, it is not surprising that there are some divergencies in the reported observations. Contaminations with extraneous materials are not easily avoided.

The results on the so-called biologically rare elements in milk examined in the School of Hygiene and Public Health at the Johns Hopkins University in Baltimore include the following elements found in small quantities (traces) in all milk samples: barium, boron, copper, iron, lithium, rubidium, strontium, titanium and zinc. Of these, barium is the only one that has not been reported previously. The presence of aluminum and manganese was not definitely demonstrated, although these elements were present in the feed mixture. The presence of antimony, arsenic, bismuth, cesium, cobalt, cadmium, fluorine, germanium, gold, indium, lanthanum, mercury, molybdenum, nickel, osmium, palladium, silver, zirconium, chromium, lead and tin could not be detected, although Zbinden concludes that the last three of these elements, chromium, lead and tin, are present in European milks.

The nutritional importance of iron among these "trace" elements is thoroughly established; there is little doubt of a possible beneficent rôle of traces of copper in hematopoiesis. Manganese is regarded as essential for a complete diet, while fluorine, aluminum and nickel have been found to be dispensable.[5] The

1. Osborne, T. B., and Mendel, L. B.: The Inorganic Elements in Nutrition, J. Biol. Chem. **34**: 131 (April) 1918.

2. Rose, Mary S.: The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body, Yale J. Biol. & Med. **4**: 499 (March) 1932; some of the items cited are taken from this review.

3. Crumbine, S. J., and Tobey, J. A.: The Most Nearly Perfect Food, Baltimore, Williams & Wilkins Company, 1929.

4. Wright, N. C., and Papish, Jacob: Science **69**: 78 (Jan. 18) 1929. Zbinden, C.: Laid **11**: 114, 1931. Blumberg, H., and Rask, O. S.: The Spectrographic Analysis of Milk Ashes, J. Nutrition **6**: 285 (May) 1933.

5. Orent, Elsa R., and McCollum, E. V.: J. Biol. Chem. **92**: 651 (Aug.) 1931. Sharpless, G. R.: J. Nutrition **6**: 163 (March) 1933. McCollum, E. V.; Rask, O. S., and Becker, J. Ernestine: J. Biol. Chem. **77**: 753 (May) 1928.

necessity for the presence of zinc has been debated. It has been apparent for some time that the zinc content of the tissues is somewhat mobile and depends, to some extent, on the content in the diet. The latest research, by Newell and McCollum [6] at the Johns Hopkins University involved the use of a diet which supported growth in animals although it had a zinc content of the order of 10^{-7} part, or less. Therefore, as the Baltimore investigators conclude, zinc is probably not an essential nutritional factor in the growth of animals.

Current Comment

CHLOROPHYLL AND THE DIET

The interest that has been awakened in recent years as to the possible nutritive significance of some of the plant pigments that are a part of common foods has repeatedly been directed to the widely occurring substance chlorophyll. There are several immediate reasons for this attitude. Chlorophyll is a compound of importance for the development of vegetable tissues. Green leaves constitute a wholesome food intake for many animal species. Consequently, as a recent writer has remarked, many practical observers have reached the superficial conclusion that chlorophyll in fresh green plant tissues helps to produce the good nutritive results noted in herbivora. Added to this conjecture is the more rigorously established fact that chlorophyll is related in chemical structure to the respiratory pigment hemoglobin, an essential in animal welfare. The hope that, owing to the existence of organic groups of a similar nature in both chlorophyll and hemoglobin, the plant pigment might prove to be effective in certain types of anemia in which regeneration of hemoglobin is called for has proved to be rather futile. It has been stated that chlorophyll, in addition to its hematopoietic properties, increases the feeling of vigor and well being.[1] These are, of course, features of health that cannot easily be evaluated in a scientific way. It might be expected, however, that the newer methods of nutrition research on laboratory animals would permit the demonstration of any specifically beneficial effects of a substance assumed to have the potentialities gratuitously ascribed to chlorophyll. Studies recently completed by Edwards and Holley [2] at the Georgia Experiment Station have furnished nothing better than disillusionment as to the hoped for nutrient potencies of chlorophyll. Apparently the greater part of the ingested pigment is eliminated as pheophytin in the feces. It should be recalled, however, that edible plant products rich in the green pigment are likely to contain the potent pigment carotene and vitamins present in less conspicuous forms. Such a parallelism does not warrant indirect and undue inferences as to any physiologic value of chlorophyll for the animal organism.

6. Newell, J. M., and McCollum, E. V.: Studies on the Rôle of Zinc in Nutrition, J. Nutrition **6**: 289 (May) 1933.

1. Burgi, E.: Ueber die therapeutische Bedeutung des Chlorophylls, Deutsche Med. Wchnschr. **48**: 1159 (Sept. 1) 1922.

2. Edwards, F. R., and Holley, K. T.: Some Effects of Chlorophyll in the Diet of the Albino Rat, Bull. 173, Georgia Experiment Station, December, 1932.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

July 25. Babes in the Woods.
July 27. Ringworm.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

July 29. Endocrine Glands in Children.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

State Board Elects.—Dr. Ira E. Huffman, Tucson, was elected president of the Board of Medical Examiners of the State of Arizona at its meeting, June 27. Others elected are Dr. Clarence W. Adams, Globe, and Charles C. Bradbury, D.O., Phoenix, vice presidents, and Dr. John H. Patterson, Phoenix, secretary.

CALIFORNIA

A New Roentgen Club.—The Pacific Roentgen Club has recently been organized by California roentgenologists, with Dr. Lowell S. Goin, Los Angeles, as chairman and Dr. Leo H. Garland, San Francisco, as secretary. The object of the club is to keep the practice of radiology in diagnosis and treatment of disease in the hands of licensed practitioners of medicine. The club registered objection to the exploitation of any physician for the gain of nonmedical concerns. It charged that, although California laws prohibit practice of medicine by corporations, many corporations are in fact practicing radiology. A program is now being mapped out to carry through the principles set forth: to prevent further inroads on the practice of the specialty, to improve standards and to obtain recognition for radiology as a branch of medicine.

History of Society.—The early history of the San Francisco County Medical Society was brought to light recently through the finding of a volume entitled *Pacific Medical and Surgical Journal and Medical Press.* These pages revealed that the society was formally organized in 1868 with Dr. J. P. Whitney as president. They contain the annual address of Dr. Henry Gibbons before the society in 1869, and those of "Edwin Bentley, Assistant Surgeon, U. S. A., J. P. Whitney, M.D., and C. B. Holbrook, M.D.," for the years 1870, 1872 and 1873, respectively. It appeared that there had been a society in existence before 1868, but that it was not active. Issues of the *San Francisco Medical Press* which were also found in the book were volume 1, numbers I and II, January and April, 1860, and volume 2, number VI, April, 1861.

CONNECTICUT

Dr. Osborne Receives Chompret Prize.—Dr. Oliver T. Osborne, emeritus clinical professor of therapeutics, Yale University School of Medicine, New Haven, was awarded the Chompret Prize, established by the International Academy of Stomatology and the American Stomatological Association, at the recent annual meeting of the latter. Dr. Osborne received this award for his "contributions to the science of stomatology and for his untiring labors to bring dentistry and medicine to a plane of better understanding and appreciation of their common problems for the good of mankind." The prize was established this year in honor of J. Chompret, professor of

stomatology, French School of Stomatology, Paris, to commemorate the first decade of continuous labor of American dentists in scientific stomatology.

ILLINOIS

Courses in Pediatrics.—A series of one day lecture courses in pediatrics, to be held in eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the education committee of the state medical society, was inaugurated in Bloomington, McLean County, July 13. The most recent information on problems concerning the care of children and the prevention of childhood diseases will be discussed in these courses, the second of which is opening today, July 22, in Warren County.

Chicago

University Health Service Revised.—The University of Chicago Health Service plan for the staff was separated from the University Health Service conducted for students, July 1, and reorganized as a special clinic in the University Clinics under the direction of Dr. George F. Dick, professor and chairman of the department of medicine. The new clinic will be on the third floor of the medical (west) wing of Billings Hospital. Members of the professional staff with the degree of doctor of medicine may now report directly to the special clinic in which they desire service, but other employees must report to the health service first. On request, at the discretion of the physician in charge, the latter may be referred to special clinics as necessary. Under the revised program, Dr. Luke W. Hunt has been appointed clinical assistant in the department of medicine in charge of the health service for the staff. The health service program for the staff and employees of the clinics group at the university was inaugurated, Dec. 1, 1931. Contributions of $1 a month were deducted from their salaries and formed a fund which was used only for defraying the costs of medical and hospital service to the individual participants of the plan (THE JOURNAL, Dec. 5, 1931, p. 1715).

Provident Hospital Dedicated.—An informal program marked the dedication of the new $3,000,000 Provident Hospital and training medical center for Negroes, June 1, although it had been open for business since May 15. Mr. A. L. Jackson, president of the board of trustees, presided, and speakers included Mr. Edwin R. Embree of the Julius Rosenwald Fund; Col. Albert A. Sprague; Dr. Henry S. Houghton, director of the University Clinics; Dr. Franklin C. McLean; Mrs. George Cleveland Hall, president of the woman's auxiliary board of the hospital, and Admiral Norman J. Blackwood, medical director. The institution is located in the remodeled building of the old Chicago Lying-In Hospital on Fifty-First Street. Previously it had been operating more than forty years at 16 West Thirty-Sixth Street. The training center is the outgrowth of an agreement entered into between the Provident Hospital and the University of Chicago in 1930, with the objective of improving the standard of medical practice and nursing among the colored race. Preference in appointments is to be given to colored physicians, although individual appointments are to be determined only on personal and professional qualifications regardless of race. About $1,250,000 was used for the purchase and remodeling of buildings formerly occupied by the Chicago Lying-In Hospital. The gift of $1,000,000 by the General Education Board of the Rockefeller Foundation will be administered by the University of Chicago for teaching purposes in the hospital, and the remainder of the fund will be used for endowment and equipment. Dr. Blackwood will continue as medical director, a position he has held since April, 1930.

IOWA

Physicians Honored in Anniversary Celebration.—The Henry County Medical Society celebrated its thirtieth anniversary in New London, June 13, and at the same time paid honor to Dr. Otto A. Geeseka, Mount Pleasant, upon his completion of fifty-five years in the practice of medicine. Dr. William S. Lessenger reviewed the thirty years of the society's history. He, Dr. Geeseka and Dr. Walter A. Sternberg, Mount Pleasant, and Dr. Garrett M. Van Ausdall, New London, are the only living members of the early organization. Dr. Geeseka was presented with a gift.

Society News.—At the summer meeting of the Austin Flint Cedar Valley Medical Society, in Cedar Falls, June 20, speakers included Drs. Sylvester W. Barnett on "Mononucleosis"; Thomas J. Irish, Forest City, "Prophylaxis and Treatment of Gas Bacillus Infection"; Merle J. McGrane, New Hampton, "Report of Series of Perforated Peptic Ulcers," and John C. Hancock, Dubuque, "The Autopsy." Clinics were conducted by Drs. Virgil S. Counseller, Rochester, on "Carcinoma of Bladder"; Glenn E. Harrison, Mason City, on pediatrics; Claude F. Dixon, Rochester, Minn., surgery, and Cecil S. O'Brien, Iowa City, the eye. Prof. Roy L. Abbott of Iowa State Teachers College, Cedar Falls, made an after dinner speech on "The Doctor of 1999."

LOUISIANA

Society News.—The Orleans Parish Medical Society was addressed at New Orleans, June 26, among others, by Drs. Ralph L. Lawrence on "Lung Abscess," and Marion K. King, "Cardiovascular Syphilis."——Drs. Benjamin T. Ferguson, Waverly, and John L. Kelly, Oak Grove, addressed a meeting of the Tri-Parish Medical Society (East and West Carroll and Madison parishes), in June, on diseases of the prostate and otitis media, respectively.——Recent speakers before the Bi-Parish Medical Society were Drs. Cecil Lorio, Baton Rouge, and C. Jeff Miller, New Orleans, on "Problem of the Thymus, with X-Ray Plates" and "Chronic Cervicitis," respectively.——The Third District Medical Society was addressed in Franklin, June 8, by Drs. Leon J. Menville, on "Bone Infections"; Maurice J. Gelpi, "Correlation of Irradiation and Surgery in the Treatment of Malignancy," and Daniel N. Silverman, "Treatment of Certain Common Disorders of the Intestinal Tract." All were from New Orleans.——At a meeting of the Seventh District Medical Society in Elton, June 22, Dr. Stanford Chaille Jamison spoke on "Practical Points on Physical Diagnosis"; Hiram W. Kostmayer, "Use of the Hormones in Gynecologic Practice," and Charles J. Bloom, "Infant Feeding." The speakers were from New Orleans.

MARYLAND

Conference on Antisepsis.—Sixty-five chemists, bacteriologists, physicians and surgeons attended a conference in Baltimore, June 26, sponsored by Johns Hopkins University to discuss ways of combating disease by antisepsis. Speakers included Justina H. Hill and Edwin C. White, Ph.D., instructor in urology and associate in chemical urology, respectively, at Johns Hopkins, and Fitzgerald Dunning and Wilton C. Harden. Drs. Hugh H. Young and Joseph Colt Bloodgood were guests of honor at a dinner, which concluded the session.

MICHIGAN

Cancer Clinic at University Hospital.—The board of regents of the University of Michigan approved the establishment of a cancer clinic at the University Hospital, June 16. The clinic will be operated by a committee composed of members of the hospital staff, under the supervision of Dr. Harley A. Haynes, medical director of the institution.

Personal.—Dr. William J. Seymour was the recipient of an honorary degree of doctor of laws at the fiftieth annual commencement of the University of Detroit, June 9, in Detroit. ——The College of the City of Detroit conferred the degree of master of science in gynecology on Dr. David M. Davidow at its annual commencement, June 6, and the honorary degree of doctor of letters on Dr. Stanley G. Miner.——Dr. Charles J. Scavarda has resigned as health officer of Flint to enter private practice.

Peninsula Meeting.—The Upper Peninsula Medical Society will hold its annual meeting in Escanaba, August 10-11. On the program will be Drs. Frank A. Kelly, Detroit, speaking on "Hernia with Spinal Anesthesia"; Moses Cooperstock, Marquette, "Management of Lobar Pneumonia in Childhood"; Damon A. Brown, Madison, "Chronic Infection of the Prostate and Urethra," and Charles L. Brown, Ann Arbor, "Consideration of Digitalis, Diuretics and Diet." Drs. James D. Bruce, Ann Arbor, and Frederick C. Warnshuis, Grand Rapids, will discuss, respectively, "An Essential in Medical Education and in Medical Practice" and "Medical Economics Applied to Practice." Speakers in the second day's session will be Dr. Norman F. Miller, Ann Arbor, on "Lower Urinary Tract Infections"; Dr. Brown, "Urogenic Heart Disease, Hyperthyroidism and Myxedema," and Dr. Warnshuis, "Head Injuries."

MISSISSIPPI

Reports Wanted for State Board File.—The Mississippi State Board of Health is interested in obtaining copies of the annual report for 1877 and the biennial report for 1886-1887, to complete the file since its organization in 1877. The board recently obtained the reports for the years 1890-1891 and 1894-1895, which had also been missing.

Society News.—Dr. Henry W. E. Walther, New Orleans, was guest speaker before the Pike County Medical Society in McComb, July 6, on "Transurethral Prostatic Resection."——

At a meeting of the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, June 13, the speakers were Drs. William P. Robert on "Preventing Diphtheria in Children"; Hiram C. Sheffield, Jackson, "Dementia Praecox," and Edley H. Jones, "Nasal Allergic Symptoms."

MISSOURI

Clinical Award. — The St. Louis Clinics is offering an annual award of $100 and a certificate of award to the member of the St. Louis Medical Society who presents the best paper at meetings of the society during the year beginning January 1. The prize will be presented at the conference of the St. Louis Clinics in May, 1935.

Members Expelled.—Drs. Robert P. Miller and Eugene Carbaugh, Kansas City, were expelled from membership by the Jackson County Medical Society, June 27, for unprofessional conduct. According to the bulletin of the society, this action was taken on account of the physicians' alleged activities in connection with the Steuben Health Clinic and the Midwest Health Foundation, respectively.

Changes on Faculty at St. Louis University. — New appointments to the staff of St. Louis University School of Medicine, according to an announcement, June 21, include Drs. Julius H. Gross as assistant professor of ophthalmology; Jerome I. Simon, assistant professor of surgery, and Joseph L. Gross and Vincent J. LoPiccolo, assistant professors of medicine. Other changes on the faculty include promotion of the following physicians:

Eugene T. Senseney, professor of otolaryngology.
Samuel B. Westlake, associate professor of otolaryngology.
Alexander E. Horwitz, associate professor of orthopedic surgery.
Franklin H. Albrecht, associate professor of orthopedic surgery.
Fritz Neuhoff, associate professor of internal medicine.
Emmett P. North, assistant professor of ophthalmology.
Julius A. Rossen, assistant professor of pediatrics.
John W. Stewart, assistant professor of surgery.
Robert D. Alexander, assistant professor of surgery.
Eugene Lee Myers, assistant professor of otolaryngology.
Eugene Lee Shrader, assistant professor of internal medicine.

Dr. John Zahorsky was made director of the department of pediatrics; previously he had been chairman.

MONTANA

Spotted Fever.—Forty-five cases of Rocky Mountain spotted fever had been reported to the Montana state health department from various sections of the state, according to newspapers, June 17.

NEW YORK

Society News.—Dr. Nelson K. Fromm addressed the Medical Society of Albany County, June 28, on "Bilateral Cervical Rib," and Robert A. Robinson, D.D.S., showed a motion picture of operations for removal of impacted teeth and cyst of the superior maxilla.——At the quarterly meeting of the Ontario County Medical Society, Geneva, July 11, Dr. George M. Gelser, Rochester, discussed clinical aspects of trichomonas vaginalis and Dr. George W. O'Grady, Rochester, pathologic aspects.

Hospitals Adopt Uniform Dispensary Admission Plan. —Rochester hospitals and dispensaries have recently adopted a uniform plan for admission to the outpatient departments. All patients applying for treatment are first asked whether they have a family physician or have recently been under the care of a physician. If either question is answered affirmatively, the applicant is requested to return to the physician for a recommendation for admission. If the condition demands immediate attention, the admitting officer communicates with the physician by telephone. If the latter cannot be reached, the patient is admitted temporarily and a letter is sent to the physician asking his approval. An income table has been drawn up as a guide in determining eligibility for dispensary treatment. If an applicant is found ineligible and has no family physician to whom he may be referred, the hospital authorities recommend at least three members of the hospital staff. Patients who are able to afford services of a private practitioner and refuse to do so are to be denied admittance to the dispensaries. Every effort will be made to prevent "shopping," and patients will be transferred from one dispensary to another only on request of the referring dispensary. Other regulations concerned provision of drugs for both acute and chronic cases, surgical appliances and glasses, and cooperation with welfare agencies. A permanent joint committee representing the hospitals and the Medical Society of Monroe County was established, with Dr. Sol J. Appelbaum as chairman. To this committee will be referred all matters of common interest to hospitals, outpatient departments and dispensaries.

New York City

Changes at Columbia. — Dr. Bernard Sachs has been appointed professor of clinical neurology and Dr. Harry Aranow clinical professor of obstetrics at Columbia University College of Physicians and Surgeons. Dr. I. Ogden Woodruff has been promoted to professor of clinical medicine.

Changes at Rockefeller Institute. — Dr. Cornelius P. Rhoads has been promoted from associate to associate member of the Rockefeller Institute for Medical Research and Dr. Theodore J. Abernathy has been appointed resident physician at the institute's hospital. Lawrence R. Blinks, Ph.D., associate in the division of general physiology, has accepted an appointment as associate professor of plant physiology at Stanford University, Calif.

Dr. Albee Receives Bowdoin Prize. — Bowdoin College, Brunswick, Maine, has awarded to Dr. Fred H. Albee the first Bowdoin Prize for "the graduate of the college who has made the most distinctive contribution in any field of human endeavor." This prize was established as a memorial to William J. Curtis, a graduate of Bowdoin in 1875, to be awarded every five years. It is to be four fifths of the income from a fund of about $20,000. Dr. Albee was graduated from Bowdoin in 1917.

Hospital News.—According to the annual report of the New York Post-Graduate Hospital for 1932, recently made public, the hospital has finished fifty years of service, during which time 263,951 patients were treated. In addition 1,599,022 persons were treated in the outpatient department and more than 29,000 physicians received graduate training in the half century.—— Dr. Roberto Alessandri, Rome, Italy, gave an address, June 19, at the New York Polyclinic Medical School and Hospital, on "Postoperative Peptic Ulcer."

NORTH CAROLINA

Society News.—Dr. Douglas Vanderhoof, Richmond, Va., was guest speaker at a meeting of the Sixth Councilor District of the Medical Society of North Carolina, June 15, in Wake Forest. Dr. Vanderhoof discussed "Chronic Duodenal Occlusion." Among other speakers were Drs. Harold L. Amoss, Durham, on "Serum Treatment of Hemolytic Streptococcic Pneumonia" and Adlai S. Oliver, Raleigh, "Obstetric Analgesia." Dr. Hubert B. Haywood, Raleigh, was elected president.——The North Carolina Urological Association met in Greensboro recently with the following speakers: Drs. John H. Neff, University, Va., on "Renal Calculi"; Sidney S. Smith, Jr., Raleigh, "Renal Infections"; Robert W. McKay, Charlotte, "Aneurysm of Renal Artery"; Andrew J. Crowell, Charlotte, and Edwin P. Alyea, Durham, both on prostatic resection.

Pediatric Seminar. — The thirteenth Southern Pediatric Seminar will be held at Saluda, July 24-August 5. Clinical material is provided in two children's hospitals at Saluda. Dr. William A. Mulherin, Augusta, Ga., is dean of the course, Dr. Frank Howard Richardson, Black Mountain, vice dean, and Dr. D. Lesesne Smith, Saluda, registrar. Among the lecturers will be:

Dr. Lawrence T. Royster, University, Va.: Upper Respiratory Infections; Physical Examination; Celiac Disease.
Dr. William L. Funkhouser, Atlanta: Congenital Feeblemindedness; Habit Formation; Vomiting as a Symptom.
Dr. Robert A. Strong, New Orleans: Convulsions.
Dr. William Weston, Columbia, S. C.: Fundamentals of Nutrition.
Dr. Wilburt C. Davison, Durham: Diarrhea; Kidney Diseases.
Dr. Horton R. Casparis, Nashville: Tuberculosis.
Dr. Philip F. Barbour, Louisville, Ky.: Heart Conditions in Children; Endocrines.
Dr. Kenneth M. Lynch, Charleston, S. C.: Pathologic Conferences.
Dr. Allen J. Jervey, Tryon: Surgical Conditions in Children.
Dr. Oliver W. Hill, Knoxville, Tenn.: Influenza: Its Complications and Sequelae; Intracranial Hemorrhage: Its Symptoms and Manifestations.

OHIO

Personal.—Dr. Robert N. Wright has been appointed physician to Wooster College at Wooster, succeeding Dr. Herbert A. Wildman, who will enter private practice in Michigan.—— Dr. George D. Lowry has resigned as physician to Ohio Wesleyan University, Delaware, to enter private practice.—— Dr. Carey P. McCord, Cincinnati, received the honorary degree of doctor of laws, May 30, from Howard College, Birmingham, Ala., in recognition of his services in reducing the occupational hazards in the life of industrial workers.——Dr. Myron D. Miller, assistant superintendent of Franklin County Tuberculosis Sanatorium, Columbus, for four years, has been made superintendent to succeed the late Dr. Charles O. Probst. Dr. Emerson M. Blake, Columbus, received a provisional appointment as assistant superintendent, subject to approval by the state civil service commission.——Dr. Claud C. Burton of the staff of the Veterans' Administration Hospital, Lexington, Ky., has been appointed director of surgery at the National Military Home near Dayton, succeeding the late Dr. Samuel

B. Woodward.——Dr. Donald E. Yochem, Columbus, has been appointed superintendent of the Licking County Tuberculosis Sanatorium, Newark, to succeed Dr. Homer M. Austin.——Dr. William H. Carey, Bellefontaine, recently resigned as health officer of Logan County, after thirteen years' service; he was succeeded by Dr. Lee E. Traul, Middleburg.

PENNSYLVANIA

Increase in Tuberculosis.—More cases of tuberculosis were reported in Pennsylvania for 1932 than for the two previous years. The number of cases was 7,805, but the death rate of 54.6 per hundred thousand of population, representing 5,364 deaths, was the lowest in the history of the state. About two thirds of those who died were under 45 years of age.

Personal.—The Parent-Teacher Association of Brentwood High School gave a banquet, May 19, in honor of Dr. William H. Goodpaster, who was for sixteen years president of the school board and who is still school physician.——Dr. Mary M. Wolfe, superintendent of Laurelton State Village, received an honorary degree at the annual commencement of Bucknell University, Lewisburg.——The Cambria County Medical Society gave a testimonial dinner in honor of Dr. Daniel S. Rice, Ebensburg, observing his completion of fifty years in practice, July 13, at the regular meeting at the Chetremon Country Club near Cherry Tree. Dr. Jesse Lynn Mahaffey, state health officer of New Jersey, Trenton, was the guest speaker.

Philadelphia

Hospital News.—The new tuberculosis unit of Philadelphia General Hospital, finished but unused for sixteen months, was opened for patients, June 12. Ninety men from the old male tuberculosis unit were moved in immediately and it was expected that 130 women patients would be moved by the end of June.

Personal.—Yale University conferred the degree of doctor of science on Alfred Newton Richards, Sc.D., professor of pharmacology, University of Pennsylvania School of Medicine, at its recent convocation.——Dr. Thomas A. O'Brien received the honorary degree of doctor of laws at the annual commencement of Villanova College, Villanova, June 8.——Dr. Mary M. Spears was recently elected the first woman member of the American Proctologic Society. She is clinical professor of gastro-enterology at the Woman's Medical College of Pennsylvania.

TENNESSEE

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended July 8, indicate that the highest mortality rate (19) appears for Memphis and the rate for the group of cities as a whole, 9.6. The mortality rate for Memphis for the corresponding period last year was 20 and for the group of cities, 9.7. The annual rate for eighty-five cities for the twenty-seven weeks of 1933 was 11.5, as compared with a rate of 11.9 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

VIRGINIA

Society News.—Dr. James Edwin Wood, Jr., University, addressed the Rockingham County Medical Society, May 15, on digitalis.——Dr. Lawrence T. Royster, University, addressed the Norfolk County Medical Society, Norfolk, May 29, on "Rheumatism and the Rheumatic Heart in Children."——At the semiannual meeting of the Northern Neck Medical Association at Heathsville, May 25, speakers included four Richmond physicians: Drs. John Shelton Horsley, Jr., "Sieve Graft"; Frank S. Johns, "Extra-Uterine Pregnancy"; William Wallace Gill, "Ocular Headaches," and Thomas E. Hughes, "Bronchoscopy and Esophagoscopy."——Dr. Frank R. Hopkins, Lynchburg, addressed the Lynchburg Academy of Medicine, June 5, on "Diabetes in Childhood."——Among speakers at a meeting of the Roanoke Academy of Medicine, June 5, were Drs. Frank Helvestine, Jr., on "Consecutive Perforations of Stomach by Peptic Ulcer" and William B. Huff, "Schiller's Lugol Test as an Aid to the Early Diagnosis of Cervical Cancer."——Dr. Marvin Pierce Rucker, Richmond, addressed the Medical Association of the Valley of Virginia, May 25, on "Painless Childbirth."——Dr. John B. Fisher, Midlothian, was elected president of the Alumni Association of the Medical College of Virginia at the recent annual meeting.——At the quarterly meeting of the Southside Virginia Medical Association in LaCrosse, June 13, the following speakers presented a symposium on diseases of the kidneys: Drs. Kinloch Nelson and Algernon S. Hurt, Jr., Richmond; Allen Barker and Herbert C. Jones, Petersburg, and William T. Gay, Suffolk.

WASHINGTON

Society News.—The King County Medical Society held a special meeting in Seattle, June 15, to hear an address by Dr. George H. Whipple. Rochester, N. Y., on "Anemia, Liver Function and Hemoglobin Production."——The Seattle Academy of Surgery held its annual meeting at Harborview Hospital, July 12-13, with Drs. William Boyd, professor of pathology, University of Manitoba Faculty of Medicine, Winnipeg, and Alfred T. Bazin, professor of surgery, McGill University Faculty of Medicine, Montreal, as guests. Dr. Boyd discussed interstitial tumors of bone and Dr. Bazin, embryologic development of the umbilicus and urachus.

WISCONSIN

Dr. Miloslavich Goes to Yugoslavia.—Dr. Edward L. Miloslavich, formerly professor of pathology and bacteriology, Marquette University School of Medicine, Milwaukee, has accepted an appointment as director of the Medicolegal Institute at the Royal University, Zagreb, Yugoslavia, and will soon leave for the new position. Dr. Miloslavich was professor of pathologic anatomy at the University of Vienna, Austria, before coming to the United States.

WYOMING

Spotted Fever.—Seventy-four cases of Rocky Mountain spotted fever had been reported to the state department of health of Wyoming for the season up to June 28. Ten deaths had occurred.

GENERAL

License Lost.—The California State Board of Medical Examiners announced, June 23, that the license of Dr. Shelby P. Phipps Strange, San Francisco, had been reported lost. The license was issued to Dr. Strange, a graduate of Cooper Medical College, Aug. 28, 1912.

Journal of Pharmacology Transferred to Society.—At the annual meeting of the American Society for Pharmacology and Experimental Therapeutics in Cincinnati in April, Dr. John J. Abel, Baltimore, founder and editor of the *Journal of Pharmacology and Experimental Therapeutics* for twenty-four years, transferred the journal to the society as its official organ. With Carl Voegtlin, Ph.D., Washington, D. C., and Dr. Reid Hunt, professor of pharmacology, Harvard University Medical School, Boston, Dr. Abel formed the original corporation which sponsored the journal. Dr. William deB. MacNider, professor of pharmacology, University of North Carolina Medical School, Chapel Hill, was elected president of the society; Arthur L. Tatum, Madison, Wis., vice president, and Dr. Velyien E. Henderson, Toronto, secretary.

Special Board Examinations in Dermatology.—The American Board of Dermatology and Syphilology will hold written examinations for physicians who have limited their practice to this branch of medicine for at least five years (group B), Saturday, October 28, in New York, St. Louis, Boston, Cleveland, San Francisco, Philadelphia and Chicago. Applicants are required to submit at this time typewritten reports of ten cases personally observed, preferably in private practice. Oral examinations for both group A (physicians who have limited their practice for at least ten years) and group B will be held in New York, December 15 and 16. All who expect to take the examinations in either group must send their applications and credentials to the office of the secretary before September 1. Application blanks and further information may be obtained from the secretary, Dr. C. Guy Lane, 416 Marlborough Street, Boston.

Resolutions of Catholic Hospital Association.—Warning that all plans for financial remuneration to hospitals or to the medical and nursing profession should be considered first for the effect they might have on the medical service rendered by the institutions was contained in a resolution adopted at the closing meeting of the Catholic Hospital Association of the United States and Canada in St. Louis, June 16. The resolution declared that although medical and hospital economics are urgent they cannot be considered dominant and the problems arising from them must be solved with relation to their significance to the central problem: the provision of effective medical care to the patient. Another resolution adopted at the same time declares the adherence of the association to the principle enunciated by the pope that "birth control is an offense against the law of God and of nature" and that therefore hos-

pitals of the association will tolerate no practices contrary to this principle. In a third resolution the association stated its belief that care of the indigent is not solely a governmental responsibility.

Warning Against Impostor.—A Wyoming physician has reported to THE JOURNAL that a man using the name "D. P. Gordon" is preying on physicians in Colorado and Wyoming, claiming to represent a "Ukiah Grape Products Company" of New York. He is said to be in Wyoming at present, having already "visited" many physicians and dentists in Colorado. He is reported to be about 58 years old, well dressed, of heavy build, and to have a pleasing personality. The supervisor of permits of the Bureau of Industrial Alcohol in Denver reports that the Colorado State Medical Society and officers of the law are looking for the man and that as far as is known there is no such firm as the Ukiah Grape Products Company. In THE JOURNAL, Sept. 3, 1932, warning was published of a man posing as a salesman in Michigan for this firm. The physician reporting at that time explained that the alleged salesman declined to have the usual official papers made out, saying that his firm saved the customer that trouble. When the victim did not receive his order, he wrote to the firm but his letter came back marked "Removed—left no address."

Radio Talks.—The American Public Health Association is sponsoring a series of weekly health broadcasts over the "national farm and home network" of the National Broadcasting Company. The series is under the direction of a committee of the association appointed at the last annual convention in Washington, D. C., consisting of Drs. John A. Ferrell, Haven Emerson and Kendall Emerson, New York; Fred O. Tonney, Chicago, and Louis I. Dublin, Ph.D., New York. All statements used in the talks, which will be given under the general title "A Nation's Investment in Health," will be censored by the committee. Future speakers and subjects are as follows:

July 26, Dr. Kendall Emerson, The Political Health Conscience.
August 2, Dr. Charles E. North, New York, Milk Supplies.
August 9, George T. Palmer, Dr.P.H., New York, Safeguarding Child Life.
August 23, Dr. George H. Ramsey, New York, Epidemiology.
August 30, Dr. Fred O. Tonney, Laboratories and Research.
September 6, Dr. Lawrason Brown, Saranac Lake, N. Y., Tuberculosis.
September 13, Louis I. Dublin, Ph.D., Health Statistics.
September 27, Dr. Alfred F. Hess, New York, Safeguarding Infant Life.
October 4, Charles-Edward A. Winslow, Dr.P.H., New Haven, Conn., Costs and Results.

Broadcasts have already been presented by Dr. Tonney, on "The Health Budget"; Dr. Herman N. Bundesen, Chicago, "Sane Curtailment of Health Budgets" and George W. Fuller, New York, "Water Supplies and Health." Suggestions for subjects of further broadcasts are solicited from physicians and the public. They should be addressed to the American Public Health Association, 450 Seventh Avenue, New York.

Contaminated Milk Responsible for Thirty Epidemics.—Contaminated milk caused thirty epidemics in 1932, according to the annual report of Dr. Samuel J. Crumbine, New York, field secretary, presented before the annual meeting of the Conference of State and Provincial Health Authorities of North America in Washington, D. C., June 5-6. In addition, two epidemics were traced to ice cream and one to cheese. Raw milk was the source of the infection in twenty-eight outbreaks. In one traced to ice cream, the owner of the store where it was sold had had typhoid fever twenty-five years previously and had a history of gallbladder infection, while, in the cheese epidemic, the milk used for the cheese had not been pasteurized. Four fewer epidemics occurred in 1932 than in 1931 and 353 fewer cases of sickness. Thirty-nine deaths from the typhoid epidemic caused by contaminated cheese were responsible for an increased number of deaths. For the second time in recent years there was no milk-borne epidemic of diphtheria in 1932. Fourteen epidemics were traced to carriers, fourteen to a case of sickness on dairy premises, one to infection from bottles and equipments and one to infection from a dairy water supply. The source of three epidemics was reported unknown. Although most of the outbreaks happened in the summer months, eight occurred in September. No epidemic was reported for November, repeating the record of 1931. The distribution of epidemics by community population showed that 48.5 per cent occurred in towns or rural communities of less than 2,500 population, indicating that an increasing proportion of milk-borne epidemics are in the smaller cities and rural communities which lack effective milk supervision and control, and where pasteurized milk is not generally available. These figures were based on fifty-nine reports received from all the provinces of Canada, all but two states, the District of Columbia and all the territorial possessions but two.

Society News.—The American Association of School Physicians will meet in affiliation with the American Public Health Association in Indianapolis, October 9-12.——Dr. Frederick H. Lamb, Davenport, Iowa, was chosen president-elect of the American Society of Clinical Pathologists at the recent annual meeting in Milwaukee. Dr. Alvin G. Foord, Pasadena, Calif., was installed as president; Dr. John J. Seelman, Milwaukee, elected vice president, and Dr. Alfred S. Giordano, South Bend, Ind., reelected secretary. Cleveland was chosen for the place of the next annual meeting.——The western branch of the American Urological Association will hold its ninth annual meeting in Vancouver, B. C., August 3-5. Guest speakers will include Drs. Hermon C. Bumpus, Jr., Rochester, Minn., on "Preoperative Preparation and the Postoperative Care in Cases of Prostatic Resection"; Winfield Scott Pugh, New York, "Electrosurgery: Its Application to Urinary Pathology," and Guy L. Hunner, Baltimore, "Calculus of the Upper Urinary Tract."——The tenth annual meeting of the Association of New York Central Lines Surgeons was held in Chicago, June 19-20. Drs. Gilbert FitzPatrick, Karl A. Meyer and Max Cutler presented a symposium on cancer and other speakers included Drs. George W. Hall, Chicago, on "Diagnosis of Head Injuries Without Skull Fracture"; Dean Lewis, Baltimore, President, American Medical Association, "Injuries of the Soft Parts"; Philip H. Kreuscher, Chicago, "Injuries to the Knee Joint." Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, gave an address following the annual dinner.—— The annual meeting of the Aero Medical Association of the United States will be held in Chicago, September 2-4, at the Palmer House, under the presidency of Dr. Frederick C. Warnshuis, Grand Rapids, Mich. Dr. David S. Brachman, Detroit, is secretary.——The National Medical Association will hold its annual convention in Chicago, August 13-14. Among speakers will be Drs. William H. Walsh, Chicago, on "Group Purchase of Hospital Service" and Rosco G. Leland, Chicago, "The Insurance Principles in Medical and Hospital Practice."——Dr. William W. Bauer, director, Bureau of Health and Public Instruction, American Medical Association, addressed the National Education Association, Chicago, July 5, on "School and Home Cooperation for the Health and Protection of Children."——The American Congress of Radiology, including meetings of the Radiological Society of North America, the American Roentgen Ray Society, the American Radium Society and the American College of Radiology, will be held in Chicago at the Palmer House, September 25-30.

FOREIGN

Personal.—Sir Charles Arthur Kinahan Ball, Dublin, has been appointed regius professor of surgery at the University of Dublin in succession to the late Sir William Taylor. ——Dr. Ivan de Burgh Daly, professor of physiology, University of Birmingham, will succeed Sir Edward Sharpey-Schäfer on his retirement from the chair of physiology at the University of Edinburgh in September.

German Physicians Asked to Resign.—It is reported that the following instructors have been asked to resign from the Medizinische Akademie in Düsseldorf: Professor Boden, ordinarius and director of the medical polyclinic; Professor Ellinger, director of the pharmacologic institute; Professor Meyer, extraordinarius, and Privat-dozent Dr. Neustadt. The University of Greifswald (Germany), one of the oldest in existence, has been rechristened the Ernst Moritz Arndt University.

International Goiter Conference.— The third International Conference on Goiter will be held in Bern, Switzerland, August 10-12. American physicians who will take part are Drs. Henry S. Plummer, Rochester, Minn., who will speak on "Pathogenesis of Basedow's Disease"; Richard B. Cattell, Boston, "Iodine Treatment of Basedow's Disease" and Albert G. Webster, Baltimore, who will discuss new studies on the etiology of endemic goiter. Drs. Edwin P. Sloan, Bloomington, Ill., and Charles H. Arnold, Lincoln, Neb., are official delegates of the American Medical Association to the conference.

Dixon Memorial Lecture.—Colleagues and friends of the late Prof. W. E. Dixon, leading British pharmacologist who died in 1931, have accumulated a fund of £695 which is to be used to found a lectureship in his memory, it was decided at a meeting at the Royal Society of Medicine, June 1. The lecture will be delivered biennially or triennially on some subject of pharmacologic or therapeutic interest under the trusteeship of the Royal Society of Medicine. Professor Dixon was for many years associated with Cambridge University, where he is said to have made the school of pharmacy famous both by his own research and that of his students. He was joint editor of the *Journal of Pharmacology and Experimental Therapeutics* and was the author of a textbook in pharmacology as well as of many articles.

Government Services

Memorial to Colonel Bruns

A portrait of the late Col. Earl H. Bruns, U. S. Army Medical Corps, will be placed in an army tuberculosis hospital as a memorial, according to a recent announcement. Colonel Bruns, who died early this year, was for many years one of the leaders in tuberculosis work in the army. It is expected that the portrait will hang in some room or building to be named in his honor. Subscriptions for the memorial should be mailed to the secretary of the Denver Sanatorium Association, Dr. Arnold Minnig, Republic Building, Denver.

Funds of Public Health Service Reduced

Expenditures of the U. S. Public Health Service for the fiscal year which began July 1 will be reduced from $10,380,328 originally appropriated by Congress to $7,860,000 by order of the Bureau of the Budget. Essential activities of the service will be maintained, although some will be curtailed. Of 376 commissioned medical officers, twenty-one were placed on the retired list, three discharged and one resigned. Quarantine and immigration activities in foreign countries have been reduced with the discharge of ten American physicians stationed outside the United States. Those who remained suffered reductions in compensation, as did most of the 700 acting assistant surgeons on part time service within the country. The appropriation for twenty-six marine hospitals and about twenty field relief stations was reduced from $5,600,000 to $4,420,000, a reduction partly met by economies in operation. Financial aid to county health units in twenty-eight states will be discontinued. Some of the units will be maintained by the counties and states, but many will probably be abandoned. Funds of the division of scientific research were cut 50 per cent, a reduction that was taken up in operation economies. Payless furloughs of two days a month will meet a similar cut in the maritime quarantine division. The division of mental hygiene will delay for one month the opening of service in new institutions in Detroit, Springfield, Mo., and Oklahoma. Altogether thirteen employees were discontinued in the Washington office, 650 at field stations and 310 engaged in rural sanitation. Twenty-five were placed on indefinite furlough and 1,500 others will take five days off without pay each month.

U. S. Public Health Service

Acting Asst. Surg. John P. Mayer, relieved at Pittsburgh and assigned to duty at the Marine Hospital, Seattle.

Passed Asst. Surg. William H. Sebrell, Jr., directed to assume charge of the office of nutrition investigations under the direction of the chief of the division of scientific research.

Surg. Estella Ford Warner, directed to assume charge of the office of child hygiene investigations, under the direction of the chief of the division of scientific research.

Passed Asst. Surg. (R) Henry H. Duke, relieved at Norfolk, Va., and assigned to duty at the Marine Hospital, New York.

Asst. Surg. Charles W. Folsom, relieved at Washington, D. C., and assigned to duty at Atlanta, Ga.

Medical Intern Jay E. Houlahan, relieved at Stapleton, N. Y., and assigned to Marine Hospital, Buffalo.

Medical Intern Floyd A. Hawk, relieved at Chicago, and assigned to duty at the U. S. Penitentiary Annex, Fort Leavenworth, Kansas.

Medical Intern Charles S. Sample, relieved at New Orleans, and assigned at the U. S. Penitentiary Annex, Fort Leavenworth, Kansas.

Medical Intern Edgar W. Moreland, relieved at Chicago and assigned at the U. S. Industrial Reformatory, Chillicothe, Ohio.

Medical Director Gustave M. Corput, relieved at Montreal, Canada, and assigned at San Diego.

Sr. Surg. George Parcher, relieved at Stapleton and assigned to duty at Bangor, Maine.

Acting Asst. Surg. George Hess, relieved at Chillicothe, and assigned at the U. S. Penitentiary, Atlanta.

Medical Intern Robert E. Blount, relieved at New Orleans, and assigned at the Marine Hospital, Galveston, Texas.

Medical Director Friench Simpson, relieved at Naples, Italy, and assigned at Fort Monroe, Va., in charge of the quarantine station at that place.

Surg. Walter G. Nelson, relieved at New York, and assigned at Ellis Island, New York.

Surg. Carl Ramus, relieved at East Boston, Mass., and assigned at Marine Hospital, New York.

Dr. George L. Cristy, placed on inactive status as passed assistant surgeon in the reserve corps, effective August 31.

Passed Asst. Surg. Eddie M. Gordon, Jr., relieved at Winnipeg, Canada, and assigned at Quarantine Station, Angel Island, Calif.

Asst. Surg. Roscoe C. Kash, relieved at Angel Island and directed to proceed to Nashville, Tenn., to establish headquarters.

Medical Director Samuel B. Grubbs, relieved at Honolulu, T. H., and assigned at Ellis Island, N. Y.

Asst. Surg. Waldemar J. A. Wickman, relieved at Pittsburgh, and assigned to Marine Hospital, Boston.

Asst. Surg. James L. Wilson, relieved at Boston, and assigned at Marine Hospital, Pittsburgh.

Ewing Taylor, placed on inactive status as surgeon in reserve corps.

Paul J. Leehey, placed on inactive status as assistant surgeon.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 1, 1933.

The British Pharmacopeia

At a meeting of the General Medical Council, Sir Henry Dale, chairman of the Pharmacopeia Committee, reported that the total number of copies of the new edition sold was just under 30,000. It was recommended that, to meet a difficulty among manufacturing chemists and pharmacists arising from the fact that the date of publication of the new issue was also the date on which alterations became operative, the Council should approach the government with view to the introduction of a bill into parliament to enable the council to fix a date subsequent to the date of publication when the Pharmacopeia should go into effect. The experience of the Pharmacopeia Committee during the past four years has shown the importance of continuous work between the issue of each pharmacopeia and its successor. It has therefore been decided that, when the new commission takes office, provision shall be made for collecting scientific and technical literature, preparing and publishing preliminary reports, the issue of addenda, and the investigation of pharmaceutic and medical problems. It is considered that in the preparation of the next pharmacopeia the most numerous and important changes in the group of substances requiring standardization by biologic methods will be concerned with the serums and bacteriologic remedies. Dr. Percival Hartley has been appointed on the commission because of his direct knowledge of these.

The British Medical Association and Compulsory Vaccination

The council of the British Medical Association has made a recommendation with regard to vaccination which is a new departure in the profession's attitude. Medical opinion has always been in favor of compulsory vaccination. In 1923 the representative meeting of the association restated the official policy and practically universal conviction of the medical profession that vaccination in early infancy, repeated after such intervals as may be deemed necessary, is the only preventive of smallpox. Owing to the enormous number of unvaccinated persons, it recognized the danger of a pandemic and urged the government to take the necessary measures to avert this peril. In 1905 the percentage of vaccinations to births was 75.8. The percentage has continually diminished, until it was only 42.6 in 1928. The English have always been great individualists and resented interference with the liberty of the individual, in his religion or mode of life, more than any other people in the world. This they have carried to such an extent as to exempt the children of "conscientious objectors" from vaccination, although the consensus of expert opinion was that this was dangerous to the community. In the last report of the council of the British Medical Association there is mentioned the opinion, expressed in some quarters, that the diminution of vaccination is partly due to the compulsory nature of the present system (a declaration of conscientious objection is necessary for exemption) and that this might be replaced by a more satisfactory condition if vaccination were only voluntary. It is also pointed out that the mild type of smallpox that has prevailed in recent years has lessened the inducement to obtain the protection of vaccination. It has also been shown that vaccination is not entirely free from the subsequent danger of encephalitis. Careful consideration of these facts and of the suggestion that voluntary vaccination, encouraged by the propaganda of the local authorities, might achieve a higher proportion of vaccination than compulsory vaccination now obtains, had led the council to submit the following resolution: "That the

British Medical Association, while reaffirming its belief in the efficacy of vaccination in conferring immunity against smallpox, is of opinion that the time has arrived when the question whether greater protection against smallpox would be afforded by voluntary rather than by compulsory vaccination should be considered." This change of attitude has attracted considerable notice in the press.

Sir Walter Fletcher: An Organizer of Medical Research

Sir Walter Fletcher, F.R.S., secretary of the Medical Research Council, has died at the age of 59, after an operation. Born at Liverpool, he was educated at Trinity College, Cambridge, and graduated in 1894 with honors in the natural science tripos, taking physiology as one of his subjects. He became a demonstrator in the physiologic laboratories of the university. He made important researches into the chemistry of muscular contraction—oxygen supply, osmotic properties of muscle, significance of the lactic acid, and the association of heat rigor with intramolecular oxygen. From 1904 to 1914 he was tutor at Trinity. In 1914 he was appointed secretary of the Medical Research Committee, a new body formed to promote medical research and financed by funds provided by the national insurance act. The outbreak of the Great War diverted its activities to medical problems, which then arose. After the war the committee was reconstituted as the Medical Research Council. The numerous and important researches directed by the council are known all over the world. Dietetics and the deficiency diseases are some of the subjects in which knowledge has been materially advanced. In the direction of these researches, Fletcher, as permanent secretary of a constantly changing Council, played the most important part. He became known wherever medical research is in progress as a great organizer. In 1928 he went to India as chairman of the Committee on the Organization of Medical Research under the Government of India.

A New Portable X-Ray Unit

A demonstration has been given of a new mobile x-ray unit that has been added to the equipment of the ambulance service of the British Red Cross Society. Radiologic examination of a patient too ill to be moved from his home has presented serious difficulties. In recent years "portable" apparatus has been available, but with definite limitations. It is claimed for the new unit, which is at the disposal of physicians for reasonable charges, that it is capable of producing as good a result as can be obtained in a fully equipped hospital department. The outfit is housed in a neat automobile. Generator, switch boards and controls are in front of the car, and the interior is fitted with specially constructed developing tanks. The equipment includes broad and fine focus tubes, Potter-Bucky diaphragm, a folding couch and a universal tube stand. A special feature is an ingenious system of electrical regulation, which overcomes the distortion unavoidable when using a small portable apparatus connected to the ordinary house current. It is possible to obtain fully exposed roentgenograms of the chest in one-fortieth second or of the stomach in one second. Arrangements have been made for the submission of the films taken by the service, with the physician's history of the case, to a member of the British Institute of Radiology or to a radiologist selected by the physician, whose considered opinion is sent with the roentgenogram to the physician.

The Hardships of Physicians in Distressed Areas

In some industrial areas in England, as much as 80 per cent of the population is out of work and is likely to continue so for some time. In some of these areas the majority of the workers have been in the habit of arranging for medical attendance for their wives and families under some contract system. Medical attendance for the workers themselves is provided by the national health insurance system. A correspondent of the *British Medical Journal* points out that when in steady employment these workers are good payers and receive medical attention for a contract payment of about 12 cents per week, generally deducted from the weekly pay by arrangement with the employer. Generations of workers have never known the need to pay a physician's bill. Now that the men are unemployed, the physicians in the distressed areas find it almost impossible to collect their levies. If they refuse to continue attendance, there is the risk that relatives and friends of the patients who come under the insurance system will go to more "sympathetic" physicians. The position of the physicians is serious and may become more serious, for the unemployed may run out of insurance benefit in time and this mainstay also may give way.

A Criticism of the Health Insurance System

At the Sanitary Congress, Dr. G. H. Pearce, health officer of Batley, Yorkshire, delivered his presidential address, in which he criticized the national insurance system. He said: "A large proportion of the medicine dispensed today under this system is both useless and unnecessary and an entire waste of money. Unfortunately, the patient does not believe this and insists on having his bottle. The general practitioner who tells the majority of his patients that they do not need medicine will soon require much smaller consulting rooms." It will be noticed that this condemnation extends beyond the insurance system to medical practice in general. The English working class has, in the words of the late Sir Frederick Treves, "a craving for bottles of medicine which is second only to the craving for strong drink." However, in the case of insurance practice the evil is intensified, for the craving can be indulged in without any additional payment, while in private practice it costs something.

PARIS

(From Our Regular Correspondent)

June 7, 1933.

The French Assembly of General Medicine

The Assemblée française de médecine générale brings together the modest practitioners of the rural districts and the masters of science in the large cities. The recent sixth session of the assembly devoted itself to the prevention of tetanus. The question has a wide interest at present. A court had imposed a severe penalty on a physician, after the death of a patient from tetanus, because he had not given an injection of antitetanus serum immediately after the injury. The whole medical profession protested against the decision, for it appeared to indicate that every injury, no matter how trivial, should be followed by an injection of serum. The evidence collected by the practitioners in the provinces revealed that there are regions of France free from tetanus—the large cities, for example, and the mining regions. There are regions that have a bad reputation for tetanus, these being universally known to local physicians. Tetanus in general has been less frequent since the war, a fact probably due to the increasing substitution of motor vehicles for horses. In the industries it is rare. In the rubber industry, for example, in 33,612 injuries (340 more or less serious) in which 710 injections were given there was not a single case of tetanus. In the mines, in 75,000 injuries only one case of tetanus developed. The very minor injuries, many of them unobserved, which receive no treatment, appear to expose the subject much more to tetanus than do the more important injuries, which require extensive dressings. It appears certain that there are subjects who have a natural immunity. But such immunity is lost in course of time. A discussion arose concerning the value of preventive serotherapy. The efficacy of such treatment was unanimously accepted. The new antitetanus anatoxin of Ramon has a potency ten times that of the serum heretofore used. Three injections at intervals of three weeks appear to confer

an immunity, and research on guinea-pigs appears to indicate that it lasts four or five years. The assembly took up also serum accidents, which seem to have become more frequent than before the war, especially the cases of persistent paralysis. It appears that an increased sensitiveness to the serum is gradually developing among the people, as is the case with respect to diphtheria. M. Bourguignon, who has had a long experience in the Hôpital de la Salpêtrière, said that the localization of the paralysis in the various muscles is determined by their weakest chronaxia. He cited the case of a family all the members of which, after an injection of antitetanus or antidiphtheria serum, developed paralysis affecting the same groups of muscles in all cases. One of the members, a physician, had given himself an injection of serum for a suspected sore throat, which was found afterward to be nondiphtheritic. The paralysis was due therefore solely to the serum. Mr. Alajouanine presented a paper on postserum paralysis. Some facts remain obscure; for example, the predilection for the right side, whereas the chronaxia is weaker on the left side. The note taken with regard to injections of antitetanus serum after injuries led to the following conclusions, which the assembly unanimously adopted: No absolute rule can be formulated. The practitioner remains the sole arbiter of his conduct in each case, and no court may hold him responsible if a case of tetanus develops, provided the physician, utilizing his experience and his knowledge, acted according to his conscience. It is evident that serum should be injected, in all cases of suspected wounds, in a milieu known to be infected. But, in view of the fact that untoward manifestations caused by the serum may be serious, it would be unjust to make every person who has an insignificant injury, not contaminated by soil or dust, and in a milieu in which tetanus is unknown, incur the risks of an injection of serum. The injured person may, furthermore, refuse to accept an injection. In that case, it is best for the physician to ask the patient to give him a written refusal, in order to protect himself before the courts in case of untoward developments.

The Congress of Legal Medicine

The annual French Congress of Legal Medicine was held, at the Institut médico-legal de Paris, May 24, under the chairmanship of Professor Balthazard. Professor Chavigny of Strasbourg spoke on the use of microbic cultures by belligerents in time of war, a use that the League of Nations has formally disapproved, although admitting that there is no means of preventing such use. Mr. Mazel of Lyons, who discussed posttraumatic delirium tremens, brought out that an attack of delirium tremens, possibly fatal, was not necessarily, when it followed a traumatism, the result of the latter. The legal responsibility for a traumatism was often difficult to prove before a court, the traumatism having usually but little importance. Mr. Etienne Martin of Lyons, taking up the discussion, observed that often at necropsy, after such accidents, one discovers an unexpected pneumonia, which is the true cause of death and which is entirely independent of the traumatism. A discussion arose between Messieurs Balthazard, Charpentier and Genil-Perrin as to whether delirium tremens constitutes a morbid entity of toxic origin. Professor Claude discussed "Psychopaths at Liberty," a subject which includes the delicate question of the proper adjustment between the rights of the harmless psychopath and the need of protecting society against the possible harmful acts of psychopaths. Professor Claude's thesis may be epitomized thus: dissemination among the public of the idea that many psychopathies are curable by appropriate treatment; increase in the number of centers for the detection and prevention of mental diseases, open to all comers at the hospitals; reservation of the hospitals of internment for subjects who are dangerous or incurable; organization of domiciliary treatment for other psychopaths, by a special personnel furnished by the hospital; compulsory notification of all subjects who are dangerous, who should be required to appear before an examining board comprising a magistrate and a psychiatrist. The board should reach an immediate decision in regard to their disposition. Mr. Toulouse proposed the creation of centers of prophylaxis in the large cities, patterned after that in the Hôpital Henri-Rousselle in Paris, of which he is the director. Mr. Wervaerck described the new Belgian organization, which provides for the treatment of harmless psychopaths at liberty. During the past three years, the medico-judicial commissions have authorized the dismissal from the asylums of 252 patients out of 600 and have observed only five recurrences necessitating reinternment.

The Sanatorium for Students

The sanatorium established by the Union nationale des étudiants has been opened. The institution was begun eight years ago but its completion was retarded by financial difficulties. With an appropriation granted by the minister of public health, the sanatorium was finally completed. It is located in the mountains at Saint-Hilaire-du-Touvet, in the Dauphiné, on the plateau des Petites-Roches. Two other private sanatoriums, that of the Union métallurgique et minière and that of the department of the Rhone, are located in the vicinity. The new sanatorium consists of two buildings, one for women students and one for men students. The total number of beds is 150. The organizers believe that the patients, although for the time being taken away from their studies, should remain in contact with the university and intellectual life.

BERLIN

(From Our Regular Correspondent)

June 12, 1933.

Eugenics in Germany

In the newly established Reichsministerium für Volksaufklärung und Propaganda, a discussion developed in regard to the essentials for the future journalistic treatment of medical problems. Ministerialrat Conti, M.D., of the medical department of the Prussian ministry of the interior, brought out that one of the first duties of practical eugenics is to support the family idea in every conceivable manner. All scornful remarks, and jokes about the men who are heads of large families of children, should be omitted. Every opportunity should be taken to call attention to the fact that nearly every man who has become prominent in public life sprang from a large family. He emphasized further that the fear of Germany becoming overpopulated is unfounded. Commercialized abortion must be sternly suppressed.

The constantly declining birth rate, the impairment of families with absolutely healthy antecedents, and the frequent mingling of races and degeneration of the German family demand the closest consideration of the federal government, that such development may be checked and the German population be thus preserved. To secure aid in the elaboration of these measures, the minister of the interior has abolished the "federal commission for the consideration of demographic problems" and has summoned an "expert council for social and eugenic problems."

The *Deutsche Korrespondenz für Gesundheitswesen und Sozialversicherung*, previously published by the medical syndicates, is to be discontinued. In its place, the newly established Aufklärungsamt für Bevölkerungspolitik und Rassenpflege is planning to publish *Korrespondenz für Volksaufklärung und Rassenpflege*, which will contain material on all questions pertaining to the theory of hereditary transmission and the promotion of racial welfare. Also *Das Hörrohr*, which was often found in the waiting rooms of physicians, is to be discontinued and will be replaced by *"Neues Volk,"* organ of the bureau for the promotion of population and racial welfare.

At the request of the special commissar for the public health service in the Free State Saxony, a department of the science of heredity and promotion of population and racial welfare will be organized in the Akademie für ärztliche Fortbildung in

Dresden. Three or four day courses are being considered, which all physicians of Saxony will be required to attend.

In Dortmund, a bureau of racial hygiene for the benefit of the city administration has been organized under the direction of a physician. Its first task will be to complete, from the standpoint of race hygiene, the collection of statistical data on the 80,000 school children. In this connection, the representative of the Bavarian ministry of justice gave, at the Congress of the Criminobiologic Society in Hamburg, June 7-10, an outline of a program for the protection of the state against inferior types of humanity. He emphasized that every German should be examined as to his biologic worth and, on the basis of the results, should be assigned to a corresponding position. Those who, on the basis of their hereditary aptitudes, could claim no assignment should be eliminated. Also criminobiologic science should from now on place itself at the disposal of the people's cause, and its exponents should be collaborators in the great movement for the regeneration of the people. It is their sacred duty, in the future, to afford the state protection against being overwhelmed by inferior types.

It is also significant that one of the most important addresses at this year's session of the Kaiser-Wilhelm-Gesellschaft zur Förderung der Wissenschaften was devoted to prognosis as to hereditary characteristics. Professor Rüdin of the Deutsche Forschungsanstalt für Psychiatrie in Munich considered the question of hereditary prognosis, or the computation of the probabilities of the hereditary risk for children. Preservation of the healthy hereditary elements and eradication of the pathologic elements constitute the bases of all race hygiene. In contrast with the theory of hereditary transmission in plants and animals, human hereditary biology must renounce experimentation and is thus entirely dependent on pure experience. The probabilities of a hereditary risk in a given case are computed with the aid of a large mass of statistical material. Persons with hereditary disorders must be detected, and in their progeny the percentages of the same or similar disorders must be determined and compared with the percentages found, on the average, in the general population. In the case of manic-depressive insanity, approximately 33 per cent of the children inherit the disease; in schizophrenia and epilepsy, the percentage is only 10. The percentage is much higher than is found in children, on the average. The hereditary menace is, of course, greatly increased if both parents are affected. Attention must not be confined to the parents but must be extended to the relatives, or the family group; for, even though the parents are healthy, if the relatives are affected it is quite possible that the pathologic inheritance will crop forth in spite of the fact that the parents are healthy. And, in addition to those with frank symptoms of the disease, a large portion of the descendants present all sorts of mental defects, for which group the collective term "psychopaths" is employed. The ideal sought is the allocation of every person, whether presenting healthy or pathologic hereditary antecedents, to a characteristic hereditary type. Through detection of the empirical hereditary prognosis, precise hereditary figures should then be established for each person's progeny. In this manner it would not only be possible to eliminate the elements with undesirable hereditary traits but it would likewise be possible to make known the individuals with sound hereditary qualities, whose lives and progeny could be protected in an adequate way; for the positive, constructve features of race hygiene are just as important as the negative, eliminating features.

Reorganization of the Medical Profession

As a preliminary to the future reconstruction of the medical profession in Germany, Dr. G. Wagner of Munich, the commissar of the medical syndicates, has adopted measures looking toward the amalgamation of the Deutscher Aerztevereinsbund and the Hartmannbund. The future amalgamation will hold its sessions in Berlin, instead of in Potsdam or Leipzig. In keeping with these measures, the *Deutsches Aerzteblatt*, organ of the Deutscher Aerztevereinsbund, and the *Aerztliche Mitteilungen*, organ of the Hartmannbund, will be merged, as of July 1, under the title *Deutsches Aerzteblatt*. In view of the historical development of the two societies, it is only natural for each to have its own independent organ; but a number of physicians of keen insight cherish the opinion that an amalgamation of the two journals is not only feasible but desirable.

No Restrictions on the Number of Medical Students

In a previous letter (THE JOURNAL, Dec. 31, 1932, p. 2276), it was stated that there was widespread sentiment in favor of restricting the number of students and that measures looking in that direction might be given a trial. Likewise spokesmen of the medical profession had demanded the introduction of certain restrictions (THE JOURNAL, Oct. 8, 1932, p. 1276). The Prussian minister of public instruction has replied to the Aerztevereinsbund that, for the present, no attempt will be made for the establishment of uniform principles controlling the number of students or looking toward a selection of candidates for the summer semester of 1933. Further observations must be made before any action can be taken. Moreover, the German *länder* recently reached a general agreement in regard to the restriction of the number of graduates of secondary schools to be recommended for admission to higher schools of learning, aside from the recent further restrictions for racial reasons.

Professor Langstein's Death

The sudden death of Prof. Leo Langstein of Berlin, on June 7, at the age of 57, is announced. Born in Vienna, he studied medicine in Austria and later in Germany, and was for years assistant of Heubner at the Universitäts-Kinderklinik in Berlin. Langstein was one of the leaders in modern pediatrics. When funds were secured for erecting a research institute for the study of the physiology and the pathology of the infant, he occupied a prominent position in that institution. He became director of the Empress Auguste Viktoria House for combating mortality in children, located in Berlin. Under his direction this institution became a model establishment. With his talent for organization, he succeeded, even in difficult times, in securing the funds that enabled him to carry on. Thousands of women have learned, in the courses that Langstein organized, to care for their children. At the same time, he developed marked activity as a scientific investigator and as a teacher. He was one of the editors of the *Ergebnisse der inneren Medizin und Kinderheilkunde.*

ITALY

(From Our Regular Correspondent)

May 15, 1933.

Congress of Ophthalmology

At the fourteenth International Congress of Ophthalmology, held in Madrid, the Italian delegation was headed by Professor Ovio, director of the Clinica oculistica of the University of Rome. Professor Ovio presented an official paper on "Non-operative Treatment of Detachment of the Retina." Professors Bietti, Caramazza, Speciale and other Italian ophthalmologists presented communications on the same subject or participated in the general discussion.

Professor Di Marzio of the University of Bologna read a paper on the differences between the results of the Gonin operation and the results of diathermocoagulation. Professor Strampelli described results that he secured with subretinal injections of blood plasma in detachment of the retina.

Professor Ruata reported his research on the etiology of trachoma and on the use of a vaccine, which he has used with success for more than one year.

A New Society

The faculty of medicine of the University of Catania established recently the Società Medico Chirurgica di Catania, and Professor Foderà, dean of the faculty of medicine, was chosen president. At the first session, Professor Di Guglielmo discussed the treatment of undulant fever; Professor Sorge discussed undulant fever due to Brucella paramelitensis.

Academy of Sciences of Apulia

At a recent meeting of the Accademia pugliese de scienze in Bari, Spadafina spoke on the evolution of fibroblasts. His research led him to conclude that the fibroblasts in tissue cultures may, under certain stimuli, be transformed into macrophages.

Trinchera exhibited a large cyst of the right femur, complicated by a complete fracture of the neck of the femur. Recovery was effected in about four months by the application of a simple traction apparatus to the limb in abduction and internal rotation.

Sannicandro's research on polypeptidemia in pregnancy indicates that there is a constant increase of polypeptides during the first months of pregnancy but more marked during the later months. The polypeptidemia is independent of azotemia and is probably due to an abnormal production of polypeptides in the region of the placenta.

Scholarships for Foreign Physicians

The committee in charge of scholarships for foreign physicians attending the Istituto Mussolini in Rome has examined the papers of competitors from forty-two countries, and has selected a physician for each of the following countries: Austria, Belgium, England, Finland, Germany and Rumania. Each scholarship amounts to 6,000 lire ($375), which includes maintenance for six months. The funds are supplied by the general management of the public health service and by the Cassa nazionale per le assicurazioni sociali.

Center for Cancer Diagnosis

In the civilian hospitals of Genoa, a center for the diagnosis and treatment of cancer has been established at the request of the minister of the interior. The center has a consulting service, in which physicians examine difficult cases to decide the nature of the study to be made in each case and to provide, if necessary, for admission of the patients to various hospitals.

Case of Chronic Obstruction of the Ileum

Dr. Pignatti of Brescia reported before the medicosurgical society a case of obstruction of the cecum, with dilatation of the distal loop of the ileum. Ten years previously the patient had suffered from peritonitis. For two years she had attacks of intestinal disturbance, which became more intense just preceding the surgical operation. There was a tumefaction on the right side. Radiologic examination revealed innumerable discoid shadows, which corresponded to the site of the tumor. It was assumed that the manifestations were caused by fruit seeds collected in a dilated loop of intestine and at the operation the distal loop of the ileum was found filled with watermelon and grape seeds, pressed together to form a large mass. The patient recovered.

The Medical Curriculum

Professor Giordano of Venice, speaking on the medical curriculum before the senate, stressed the danger present in some universities that the subject of anatomy be reduced to a mere routine. In his opinion the interval between graduation and the taking of the government examination is too short. Giordano holds that at least six months or a year of medical practice should be completed by the graduate before he is admitted to the government examination. This might be accomplished by reducing to five years the university instruction (which now extends over six years) and by omitting certain specialties, which could be taken up in postgraduate courses. General medical culture, he said, is today much neglected.

Distribution of Gas Masks

Regulations have been enacted controlling the distribution of gas masks. In certain places, which will be determined, all the civil and military personnel that, in case of war, must carry on will be provided with masks, which will vary in type, depending on whether they are to be used by personnel that must not cease working during the progress of an air attack or by persons who can stop their work (the passive civil population) and seek protection in shelters. The masks needed for the various departments of the government will be supplied by the respective ministries, under the supervision of the ministry of war. The masks needed for the corporations associated with the government, for the provinces, for the communes and for private parties, may be secured by purchase directly from the authorized firms. The production of these types of masks is under the control of the central government.

Laboratory for Study of Physiology of Mountain Regions

In the Alpine school of the Guardia di finanza, a laboratory has been established for the study of physiologic problems pertaining to athletics. This laboratory, at Predazzo, more than 1,000 meters above the sea level, is equipped with modern apparatus for an examination of the respiratory organs and the cardiocirculatory system. The data collected will lead ultimately to the establishment of criteria for the selection of the type of constitution best adapted for mountain service.

BUDAPEST

(From Our Regular Correspondent)

May 31, 1933.

The Medical Meeting at Balatonfüred

A medical congress was held, May 9-16, at the picturesque bathing resort Balatonfüred on Lake Balaton. The congress was attended by an unusually large number of physicians; in fact, it belied the misery in the profession which, unfortunately, is extant. On the other hand, the large attendance is proof that physicians can spare a week to go to the congress, as they lose little by being absent from their practice. Joseph Sümeghi, councilor of health, read a paper on "The Practitioner and Balneology." Practitioners are recommending less and less the use of natural waters, in spite of the fact that in the treatment of chronic diseases they are indispensable. The ways by which baths affect disease vary and it is necessary that physicians know about them. Balneology is not a compulsory study at the universities, but it should be regarded as a part of pharmacology and at the examinations at least one question on balneology should be given to every candidate. He explained that the baths act on the sensory nerve endings, and the stimuli originating there are conducted elsewhere. The effect depends on the temperature and chemical composition of the baths, and other circumstances.

Dr. Elemér Scipiades read a paper on gynecologic hemorrhages, in which he outlined the principles of treatment. If there is an anatomic cause present, this has to be treated, usually by surgical methods. If no such cause is present, a search should be made for inflammation, in which cases the treatment can be medical only. If this can be excluded, then general treatment should be resorted to. In the treatment of some kinds of gynecologic hemorrhages an important rôle should be accorded to dietetic and balneologic treatment.

Dr. Istók Bertalan spoke of physical methods in the treatment of heart disease. He said that although during the last ten years more attention had been paid to physical medicine,

comparatively little had been given to its application to heart disease. He is of the opinion that much more should be done by physical means for heart disease. Drugs have a limited value in these disorders. Rest, regulated exercise, changes of environment, and, as far as possible, freedom from anxiety and mental worry are important. With certain kinds of baths the main effect is capillary dilatation and an increased blood flow, with a desirable readjustment of blood pressure. The reflex result of this on the heart, as shown by F. G. Thomson, is to slow the beat and increase its propulsive force. Following a short bath at 39 or 40 C. there was an immediate rise in the systolic pressure, but, almost always, a drop in the diastolic pressure. Even in the normal person a hot bath produces profound changes in the heart action. Carbon dioxide baths definitely affect the basal metabolism, cause an increased flow of blood through the peripheral vessels and so relieve the heart.

The number of physical defects is alarming in Hungary. At the last meeting of the Statistical Society, Dr. Michael Horvath, lecturer on orthopedics at the University of Budapest, made public some figures. He knows that the statistics are incomplete. His investigations prove that more than half of the defectives, and particularly those of the well-to-do classes, deny their physical defects. The statistics do not include the war invalids and the industrial cases, yet the number of cripples amounts to more than 27,000. In proportion to the small population, nine and a half millions, this figure must be regarded as excessively high. Most of the conscripted cripples are under age, and in good part their deformations are due to deficient housing and nutrition, rickets, tuberculosis and caries. If to these figures are added the war invalids and the industrial cases, the sad conclusion must be made that in Hungary one person in sixty-eight is of unsound body.

The Death of Professor Ferenczi

The Hungarian scientific world sustained a great loss in the death of the psychoanalyst Alexander Ferenczi. Immediately after Professor Freud of Vienna proclaimed his doctrines on psychoanalysis, Ferenczi went to Vienna and became a zealous and ingenious pupil and follower of his master. Coming back to Budapest, Ferenczi tried to win Budapest physicians over to psychoanalysis. He succeeded in gaining many ardent adherents, so that shortly afterward he founded the Hungarian Psychoanalytic Society and became its president. This society had to fight against prejudice, not only at the outset but even after psychoanalysis became established. Years later Ferenczi was elected one of the chairmen of the Vienna Psychoanalytic Union, which post he filled with zeal. In spite of the distance from Budapest to Vienna, he scarcely missed a meeting. His untimely death in his fifty-ninth year is mourned by psychoanalysts throughout the world. At the cemetery, Prof. Paul Federn, vice president of the Vienna Psychoanalytic Union, and Anna Freud, daughter of Professor Freud, delivered eulogies. Both emphasized that Ferenczi was a man who not only dealt with the practical problems of healing but also had an absorbing scientific interest in his work.

Marriages

GLENN CLOVIS LORD, Indianapolis, to Miss Rose-Ann O'Brien of Terre Haute, Ind., June 12.

RUDOLPH F. NIELSEN to Miss Lillian Petersen, both of Cedar Falls, Iowa, June 21.

THOMAS M. BOULWARE to Miss Mary Irene Hall, both of Birmingham, Ala., May 30.

ARNOLD CASSELL, New York, to Miss Rose Rapport of Bayonne, N. J., June 28.

CHARLES ADAMS HOLDER, Paris, France, to Mrs. Dorothy Caruso Ingram, July 5.

Deaths

William Blair Stewart ⊕ Atlantic City, N. J.; Medico-Chirurgical College of Philadelphia, 1890; fourth vice president of the American Medical Association in 1907-1908 and a member of the House of Delegates, 1927-1930; fellow and governor of the American College of Physicians; past president of the Atlantic County Medical Society; assistant professor of materia medica and physiologic action of drugs at his alma mater, 1893-1898; member of the Atlantic City advisory board number 1 during the World War; at one time member of the board of education; formerly chief of the medical staff of the Atlantic City Hospital; aged 66; died, July 11, of heart disease.

Theodore Eugene Oertel ⊕ Augusta, Ga.; Columbian University Medical Department, Washington, D. C., 1892; professor of clinical ophthalmology and otolaryngology, University of Georgia Medical Department; member of the American Academy of Ophthalmology and Oto-Laryngology and the American Laryngological, Rhinological and Otological Society; served during the World War; fellow of the American College of Surgeons; on the staffs of the University Hospital, Wilhenford Hospital for Women and Children and the U. S. Veterans' Hospital, number 62; author of "Medical Microscopy"; aged 69; died, June 27.

Ira Carleton Chase ⊕ Fort Worth, Texas; University and Bellevue Hospital Medical College, New York, 1899; member of the House of Delegates of the American Medical Association, 1910, 1918 and 1919, and member of the Judicial Council, 1919-1925; past president and secretary of the State Medical Association of Texas; fellow of the American College of Surgeons; on the staffs of St. Joseph's Infirmary and the Methodist Hospital; for eight years editor of the *Texas State Journal of Medicine;* aged 64; died, June 20, of carcinoma.

James Julius Richardson ⊕ Atlantic City, N. J.; University of Maryland School of Medicine, Baltimore, 1889; formerly clinical professor of otolaryngology, Howard University College of Medicine; fellow of the American College of Surgeons; at one time on the staffs of the Providence and Freedmen's hospitals, Washington, D. C.; aged 65; died, June 28, of heart disease.

Weller Van Hook, Coopersville, Mich.; College of Physicians and Surgeons of Chicago, 1885; member of the Illinois State Medical Society; professor of surgery, Northwestern University Medical School, Chicago, 1896-1908; at one time on the staff of the Wesley Memorial Hospital, Chicago; aged 71; died, July 1, of cerebral hemorrhage.

Edward H. Kessler ⊕ St. Louis; St. Louis Medical College, 1887; member of the American Roentgen Ray Society and the Radiological Society of North America; senior instructor in radiology, St. Louis University School of Medicine; on the staff of the Mount St. Rose Sanatorium; aged 68; died, June 10, of heart disease.

Frederick Treon ⊕ Aurora, Ind.; Medical College of Ohio, Cincinnati, 1879; member and past president of the South Dakota State Medical Association; fellow of the American College of Surgeons; formerly on the staff of the Chamberlain (S. D.) Hospital and Sanitarium; aged 77; died, June 20, of arteriosclerosis.

Raymond David Kahle, Lima, Ohio; University of the City of New York Medical Department, 1884; past president and at one time member of the state board of health; formerly on the staffs of the City Hospital and St. Rita's Hospital; aged 73; died, June 16, of coronary thrombosis and arteriosclerosis.

Alfred Trenchard-Wood, Central Islip, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; member of the American Psychiatric Association; on the staff of the Central Islip State Hospital; aged 59; died suddenly, June 25, of cerebral hemorrhage.

Lipman Miller Kahn ⊕ New York; Memphis (Tenn.) Hospital Medical College, 1900; fellow of the American College of Surgeons; served during the World War; on the staffs of the Beth David and Lebanon hospitals; aged 53; died, June 25, of bacterial endocarditis.

Aldrich Robert Burton ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1917; served during the World War; on the staff of the Mercy Hospital; aged 40; died, June 27, in London, England, of septicemia, following peritonsillar abscess.

George Darvin Jennings, Covina, Calif.; Northwestern University Medical School, Chicago, 1899; member of the California Medical Association; veteran of the Spanish-American

War; aged 60; died, June 6, of hypertension, chronic myocarditis and arteriosclerosis.

Harry Bugge Moe ✠ Deerfield, Wis.; Rush Medical College, Chicago, 1915; member of the Illinois State Medical Society; past president of the La Fayette County Medical Society; aged 44; died, June 16, in a hospital at Madison, of heart disease.

George Henry Bentz, Kearney, Neb.; Kansas City (Mo.) Medical College, 1902; member of the Nebraska State Medical Association; served during the World War; aged 62; died, June 3, as the result of injuries received in an automobile accident.

Anna Mary Dice, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1925; member of the Ohio State Medical Association; aged 50; died, June 28, in the University Hospital, of fibroid tumor of the uterus and endometritis.

Henry L. Irish, Turner, Maine; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1875; member of the Maine Medical Association; aged 80; died, April 29, of malignant tumor of the prostate and sacrum.

Oliver S. Kash, Carlisle, Ky.; Kentucky School of Medicine, Louisville, 1882; member of the Kentucky State Medical Association; formerly county health officer; aged 77; died, June 24, of carcinoma of the throat.

Robert G. Hulbert, San Diego, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; member of the California Medical Association; aged 81; died, June 1, of hypostatic pneumonia and arteriosclerosis.

Peter John Dervin, Boston; Albany (N. Y.) Medical College, 1892; member of the Massachusetts Medical Society; aged 62; died, June 9, of myocarditis, arteriosclerosis and carcinoma of the rectum.

Francis Xavier Deroin, Chicopee, Mass.; Harvard University Medical School, Boston, 1883; formerly member of the board of health and school committee; aged 78; died, June 11, of cerebral thrombosis.

William Benjamin Pickrell, Los Angeles; Dunham Medical College, Chicago, 1898; University of Illinois College of Medicine, Chicago, 1906; aged 60; died suddenly, June 10, of coronary thrombosis.

Frank W. Dimmitt, Sherman, Texas; Rush Medical College, Chicago, 1881; member of the State Medical Association of Texas; aged 73; died, April 9, of chronic myocarditis and mitral regurgitation.

Vernon Roberts, Dayton, Ohio; State University of Iowa College of Medicine, Iowa City, 1907; on the staff of the Veterans' Administration Home; aged 48; was shot and killed, June 29.

William F. Justice, Lancaster, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 79; died, June 26, in the Graham Protestant Hospital, Keokuk, Iowa, of myocarditis.

Otis W. McQuown ✠ Marion, Ind.; University of Indianapolis Medical Department, 1900; county health officer; served during the World War; aged 56; died, June 23, of heart disease.

Jay Melancthon Kilborne, Sioux City, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1894; served during the World War; aged 60; died, May 25.

George M. Spencer, Grattan, Mich. (licensed, Michigan, 1900); aged 88; died, June 12, at the home of his son in Belding, of cerebral hemorrhage and arteriosclerosis.

Francis C. Herr, Ottawa, Kan.; Jefferson Medical College of Philadelphia, 1879; member of the Kansas Medical Society; aged 80; died, June 8, of carcinoma of the rectum.

Andrew Daniel Nelson ✠ Richland Springs, Texas; University of Texas School of Medicine, Galveston, 1898; aged 68; died, May 16, in a hospital at Temple.

J. William Davis ✠ Livingston Manor, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1902; aged 56; died, June 24, of heart disease.

Theodore Allen Prouse, Greenfield, Mo.; University of Kansas School of Medicine, Kansas City, Kan., 1906; aged 59; died, May 27, of acute dilatation of the heart.

Hermann P. A. Carstens ✠ Forest Park, Ill.; Bennett Medical College, Chicago, 1912; aged 61; died, June 11, of coronary thrombosis and chronic myocarditis.

George E. Eye, Long Beach, Calif.; Ensworth Medical College, St. Joseph, Mo., 1895; aged 66; died, May 26, of coronary thrombosis and arteriosclerosis.

Edward Dennis Cartwright, McPherson, Kan.; Washington University School of Medicine, St. Louis, 1931; aged 26; was accidentally drowned, June 4.

Horace M. Champney. Belle Fourche, S. D.; Long Island College Hospital, Brooklyn, 1885; formerly county coroner; aged 75; died, June 15, of senility.

Joseph Allison Jarrell, Jackson, Ga.; Bellevue Hospital Medical College, New York, 1885; aged 74; died, June 8, of carcinoma of the stomach.

Roscoe Chase Baker, Billerica, Mass.; Denver and Gross College of Medicine, 1907; aged 55; died, June 27, of gastric ulcers and peritonitis.

Hobart Jay Holcomb, Deland, Fla.; Bellevue Hospital Medical College, New York, 1882; aged 73; died, June 25, of cerebral hemorrhage.

Alexander Ben Fairfield, Beamsville, Ont., Canada; University of Toronto Faculty of Medicine, 1926; aged 32; died suddenly, May 12.

Thomas A. Bickerstaph, Lagrange, Ohio; Hahnemann Medical College and Hospital, Chicago, 1895; aged 74; died, May 1, in Elyria.

Joseph Brantley Harvey, Hampton, S. C.; Medical College of the State of South Carolina, Charleston, 1888; aged 66; died in May.

Clarence D. Romans, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1884; aged 79; died, June 12, of carcinoma of the rectum.

Albert John Kreitzer, Longmont, Colo.; Rush Medical College, Chicago, 1896; aged 75; died, June 19, of uremia and pyelonephritis.

John Bennett, Ava, Ill.; Missouri Medical College, St. Louis, 1898; aged 63; died, June 19, of heart disease and diabetes mellitus.

George O. Dibblee, Moores Mills, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1880; aged 77; died recently.

Noah Monroe Dukes ✠ Strawberry Plains, Tenn.; University of Louisville (Ky.) School of Medicine, 1890; aged 71; died, June 6.

Calvin Griffith McCullough, Chicago; Starling Medical College, Columbus, Ohio, 1883; aged 71; died, July 4, of cerebral hemorrhage.

Abraham L. Johnson, Prophetstown, Ill.; Rush Medical College, Chicago, 1891; aged 68; died, June 16, of coronary thrombosis.

George Edwards Abbott, Lakeside, Calif.; Harvard University Medical School, Boston, 1872; aged 84; died, May 28, of senility.

George P. Oldham, Raywick, Ky.; University of Louisville School of Medicine, 1882; aged 75; died, June 3, in Louisville, of uremia.

Forrest Lee Cosby, Columbus, Ga.; Atlanta Medical College, 1894; aged 68; died, June 11, in the Columbus City Hospital.

James Battle Farrington, Los Angeles; University of Texas School of Medicine, Galveston, 1899; aged 65; died, May 24.

Iman Wisse, Grand Rapids, Mich.; College of Physicians and Surgeons of Chicago, 1886; also a minister; aged 79; died, May 24.

Frank Romayne Wright ✠ West Allis, Wis.; Rush Medical College, Chicago, 1885; aged 70; died, June 22, of heart disease.

Arthur B. Sturm, Oak Park, Ill.; Rush Medical College, Chicago, 1899; aged 58; died, June 16, of cerebral hemorrhage.

Silas Elbert Morse, Dixon, Calif.; University of Kansas City (Mo.) Medical Department, 1882; aged 79; died, May 12.

Haig A. Sims, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1904; aged 50; died, May 13.

Fletcher D. Norton, Columbus, Ind.; Indiana Medical College, Indianapolis, 1877; aged 80; died, June 26, of paralysis.

Lucien Marsolais, Montreal, Que., Canada; University of Montreal Faculty of Medicine, 1921; aged 36; died, May 11.

Ernest Peltier, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1896; aged 63; died, March 15.

John Gilbert McMillan, Decaturville, Tenn.; University of Nashville Medical Department, 1900; aged 72; died, May 8.

David S. Fisher, Reading, Kan.; College of Physicians and Surgeons, Baltimore, 1884; aged 75; died, May 15.

John C. Aikman, New York; Detroit College of Medicine, 1891; aged 64; died suddenly, June 16.

James W. Smith, Cutler, Ill.; Missouri Medical College, St. Louis, 1881; aged 79; died, June 4.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

Herb-O-Life.—Western Wonder Remedy Co., Cincinnati. Composition: Epsom salt, citric acid, plant drug extract and water. Cure-all. Fraudulent therapeutic claims.—[*N. J. 18529; March, 1932.*]

Livingston's Dyspepsine.—Livingston Medicine Co., Griffin, Ga. Composition: Chalk, magnesium carbonate, baking soda, starch, extracts of plant drugs and a small quantity of a phosphate. For dyspepsia, etc. Fraudulent therapeutic claims.—[*N. J. 18530; March, 1932.*]

Vincol Herb Tablets.—Vinco Herb Co., Dayton, Ohio. Composition: Extracts of red pepper, golden seal and a laxative drug. For stomach, liver, etc. Fraudulent therapeutic claims.—[*N. J. 18531; March, 1932.*]

Neu-Carb.—Gibson-Howell Co., Jersey City, N. J. Composition: Chalk (42 per cent), magnesium carbonate (15 per cent), starch, talc and a bland oil flavored with peppermint. For digestive troubles, etc. Fraudulent therapeutic claims.—[*N. J. 18534; March, 1932.*]

Dipsol.—Bessell Chemical Co., Hackensack, N. J. Composition: Potassium chlorate (2 per cent), citric acid (2.6 per cent) and water (95.4 per cent). For sore throat, coughs, tonsillitis, etc. Fraudulent therapeutic claims.—[*N. J. 18540; March, 1932.*]

Lee's Pills for Kidneys.—Brewer and Co., Inc., Worcester, Mass. Composition: Buchu, bearberry and pichi. Fraudulent therapeutic claims.—[*N. J. 18541; March, 1932.*]

Lee's Vegetable Female Cordial.—Brewer and Co., Inc., Worcester, Mass. Composition: Viburnum, sugar, alcohol (8.3 per cent by volume) and water. Alcohol content falsely declared. Fraudulent therapeutic claims.—[*N. J. 18542; March, 1932.*]

Lee's Wonderful Herb Tonic.—Brewer and Co., Inc., Worcester, Mass. Composition: Aloe, sarsaparilla, a small quantity of an iodine compound, methyl salicylate, sassafras oil, alcohol, sugar and water. For kidney and liver disorders, rheumatism, etc. Fraudulent therapeutic claims.—[*N. J. 18543; March, 1932.*]

Lee's Nervine Tonic.—Brewer and Co., Inc., Worcester, Mass. Composition: Extracts of celery, alcohol (18.5 per cent by volume), sugar and water. Alcohol content falsely declared. Fraudulent therapeutic claims.—[*N. J. 18544; March, 1932.*]

Lee's Prescription No. 3566.—Brewer and Co., Inc., Worcester, Mass. Composition: Bearberry, alcohol (18.3 per cent by volume) and water. For kidney and liver disorders, etc. Alcohol content falsely declared. Fraudulent therapeutic claims.—[*N. J. 18545; March, 1932.*]

Lee's Rheumatic Elixir.—Brewer and Co., Inc., Worcester, Mass. Composition: Sodium salicylate (7.8 per cent), alcohol, sugar, and water. Fraudulent therapeutic claims.—[*N. J. 18546; March, 1932.*]

Lee's Antiseptine Powder.—Brewer and Co., Inc., Worcester, Mass. Composition: Boric acid, aluminum sulphate, salicylic acid, and small quantities of menthol, thymol, eucalyptol and methyl salicylate. Not antiseptic. For vaginal and nasal douche, etc. Fraudulent therapeutic claims.—[*N. J. 18547; March, 1932.*]

Maxey's Vegetable Tonic.—Maxey Medicine Co., Winston-Salem, N. C. Composition: Small quantities of caffeine, chloroform and ammonium chloride with oils of mustard, sassafras and clove, and water. For indigestion, etc. Fraudulent therapeutic claims.—[*N. J. 18651; May, 1932.*]

Maxey's One Minute Liniment.—Maxey Medicine Co., Winston-Salem, N. C. Composition: Chloroform, oils of mustard and clove, and methyl salicylate, with water. Fraudulent therapeutic claims.—[*N. J. 18651; May, 1932.*]

Number Twenty Seven.—Washington Wholesale Drug Exchange, Washington, D. C. Composition: Epsom salt, quinine sulphate, an iron compound and water. For influenza, malaria, etc. Fraudulent therapeutic claims.—[*N. J. 18652; May, 1932.*]

Anti-Rheumin.—Volz Co., Erie, Pa. Composition: Capsules containing acetanilid, acetphenetidin, salicylic acid and rhubarb. For rheumatism, pain, etc. Failed to declare presence or amount of acetphenetidin. Fraudulent therapeutic claims.—[*N. J. 18654; May, 1932.*]

K-K-K Keyser's Pink Kold Kapsules.—Keyser Chemical Co., Inc., Roanoke, Va. Composition: Salol, quinine sulphate, camphor, ginger, red pepper and aloin. Fraudulent therapeutic claims.—[*N. J. 18656; May, 1932.*]

Gold Bond Sterilseptic Toilet Powder.—Gold Bond Sterilizing Powder Co., Fairhaven, Mass. Composition: Talc and boric acid with small quantities of eucalyptol and methyl salicylate. Not antiseptic. Fraudulent therapeutic claims.—[*N. J. 18657; May, 1932.*]

Woolley's Bronchial and Lung Ointment.—John T. Woolley Remedy Co., Wabash, Ind. Composition: Oils of turpentine, mustard, sassafras and garlic, incorporated in petrolatum. Fraudulent therapeutic claims.—[*N. J. 18658; May, 1932.*]

Ward's Liniment.—Ward's Medical Co., Winona, Minn. Composition: Extracts of red pepper and sassafras, small quantities of camphor oil, with soap, alcohol and water. Fraudulent therapeutic claims.—[*N. J. 18660; May, 1932.*]

Uncle Jerry's Salve.—Jerry Hubbard Co., Miami, Okla. Composition: Petrolatum, linseed oil, rosin, Peru balsam and oils of cinnamon and sassafras. Falsely claimed to be antiseptic. Fraudulent therapeutic claims.—[*N. J. 18663; May, 1932.*]

Ulcicur.—Ulcicur Co., Inc., Chicago. Composition: (Liquid) a bitter drug such an gentian, alcohol, glycerin, sugar and water; (powder) bismuth subnitrate. For stomach ulcers, etc. Fraudulent therapeutic claims.—[*N. J. 18665; May, 1932.*]

Admirine.—Eucaline Medicine Co., Dallas, Tex. Composition: Hydrochlorides of quinidine and cinchonidine, iron (ferric) chloride, a laxative drug, and a trace of eucalyptus oil with alcohol, sugar and water. "Body builder" and "blood medicine." Fraudulent therapeutic claims.—[*N. J. 18666; May, 1932.*]

Ergotole.—Sharpe and Dohme, Inc., Baltimore. Adulterated because below standard of strength claimed. Fraudulent therapeutic claims.—[*N. J. 18667; May, 1932.*]

Johnson's American Anodyne Liniment.—Chemicals and Drugs, Inc., Baltimore. Composition: Alcohol (14.8 per cent), a fatty oil, oils of turpentine and camphor, ammonia, ether and water. Fraudulent therapeutic claims.—[*N. J. 18676; May, 1932.*]

Narco Compound Syrup of Hypophosphites.—Hance Bros. and White, Inc., Philadelphia. Composition: Potassium, manganese, strychnine, iron, calcium and quinine hypophosphites in water. For tuberculosis, etc. Fraudulent therapeutic claims.—[*N. J. 18677; May, 1932.*]

Vegetable and Hemlock Oil.—Vegetable and Hemlock Oil Medical Co., Detroit. Composition: Chiefly turpentine oil. For lung disorders, catarrh, rheumatism, etc. Fraudulent therapeutic claims.—[*N. J. 18681; May, 1932.*]

Mackie's Pine Oil.—Johnston-Mackie Co., Inc., New Orleans, La. Composition: Essentially a coniferous oil. For skin eruptions, asthma, rheumatism, etc. Falsely claimed to be germicidal. Fraudulent therapeutic claims.—[*N. J. 18686; May, 1932.*]

Tuttle's Family Elixir.—Tuttle's Elixir Co., Boston. Composition: Camphor oil and a coniferous oil, ammonia, ox gall, alcohol (about 30 per cent by volume) and water. For rheumatism, neuralgia, corns, sore throat, etc. Fraudulent therapeutic claims.—[*N. J. 18688; May, 1932.*]

Lignol Ointment.—Girard Pharmacal Co., Philadelphia. Composition: Petrolatum and a tarry oil. Falsely claimed to be antiseptic. For skin diseases, etc. Fraudulent therapeutic claims.—[*N. J. 18695; May, 1932.*]

Lignol Soap.—Girard Pharmacal Co., Philadelphia. Composition: Essentially soap containing a tarry oil. Falsely claimed to be germicidal. For skin diseases, etc. Fraudulent therapeutic claims.—[*N. J. 18698; May, 1932.*]

Wiley's Palatable Preparation (Extract of Cod-Liver Oil with Malt and Hypophosphites).—Hance Bros. and White, Inc., Philadelphia. Composition: Extracts of plant drugs, compounds of phosphorus, iron, manganese, calcium, potassium, quinine and strychnine, with alcohol (11.6 per cent by volume), glycerin, sugar and water. Did not contain the cod-liver oil vitamins. For tuberculosis, nervous prostration, etc. Fraudulent therapeutic claims.—[*N. J. 18699; May, 1932.*]

Girard Uterine Tonic.—Girard Pharmacal Co., Philadelphia. Composition: Ground plant drugs and extracts of plant drugs. For "female disorders." Fraudulent therapeutic claims.—[*N. J. 18700; May, 1932.*]

Spasmoline.—Spasmoline Co., McComb, Ohio. Composition: Essentially castor oil (28 per cent by volume), extract of ipecac, with alcohol, sugar and water. For whooping cough, croup, etc. Fraudulent therapeutic claims.—[*N. J. 18727; May, 1932.*]

Tecthina.—C. J. Moffett Medicine Co., Columbus, Ga. Composition: Essentially bismuth subnitrate, chalk, sodium citrate, calomel, and sugar, flavored with cinnamon. For diarrhea, cholera morbus, worms, etc., in children. Fraudulent therapeutic claims.—[*N. J. 18729; May, 1932.*]

Breeden's Rheumatic Compound.—Breeden Drug Co., Inc., Memphis. Composition: Potassium iodide, extracts of plant drugs, sugar, alcohol and water. Fraudulent therapeutic claims.—[*N. J. 18731; May, 1932.*]

Thorson's Soap Lake Salts.—Thorson's Soap Lake Products Co., Soap Lake, Wash. Composition: Essentially washing soda (50 per cent), Glauber's salt (25 per cent), common salt (10 per cent) and small quantities of other salts, moisture (13 per cent). Cure-all. Fraudulent therapeutic claims.—[*N. J. 18733; May, 1932.*]

Germ-Elim.—Creotina Chemical Co., and Germ-Elim Co., Belleville, Ill. Composition: Guaiacol, sodium hypophosphite, sugar and water. For skin disorders, etc. Falsely claimed to be antiseptic. Fraudulent therapeutic claims.—[*N. J. 18735; May, 1932.*]

Plantlax.—Nature's Herb Co., San Francisco. Composition: Essentially powdered crude drugs, extracts of nux vomica and aloe and a trace of peppermint oil, with alcohol and water. For liver and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 18738; May, 1932.*]

Hazard's Preparation.—C. A. Hazard Chemical Co., Youngsville, Pa. Composition: Borax, boric acid, salicylic acid (12 per cent), glycerin and water. For all skin diseases, etc. Fraudulent therapeutic claims.—[*N. J. 18741; May, 1932.*]

Correspondence

"THE PATHOGENICITY OF THE FUSIFORM BACILLUS AND SPIRILLUM OF PLAUT VINCENT"

To the Editor:—In THE JOURNAL, March 11, is published an article by Lichtenberg and his associates on this subject. The fundamental problems of fusospirochetal disease seem to have completely escaped the authors. In view of the tragedies that will surely follow application of their implied therapeutic deductions, we feel obligated to protest. The title is misleading. From its wording one would expect a discussion of the spirochetes, but they are ignored except as vaguely confused with the terms fusospirochetes and fusiform bacilli and are proved nonpathogenic by that dangerous method of assumption. The title errs in stating "the fusiform bacillus." It would have been more correct to have stated "a fusiform bacillus" and that tentatively.

In fusospirochetal disease the spirochete for the following reasons is considered to be most important:

1. Fusospirochetal disease of the mouth is limited exclusively to the dentulous age; i. e., the spirochete age. Prior to the appearance and after the loss of the teeth, spirochetes cannot be found in the oral cavity. That is: no teeth, no gingivae, no anaerobic nidi, no spirochetes, no fusospirochetal disease.

2. The frequency of the spirochetes in the oral cavity parallels to a striking degree the absence or extent of pathologic changes in the gingival structures. Spirochetes are absent or rare in the normal mouth but are frequent in gingivitis and periodontoclasia.

3. Fusospirochetal disease not infrequently occurs in epidemics and as the victims develop this disease the one characteristic and striking change in the oral flora is the appearance of the spirochetes in increasing numbers.

4. Pathologic examination of the diseased structures shows the spirochetes leading the bacterial invasion into the normal tissues.

5. Specific treatment, particularly solution of potassium arsenite or the salts of bismuth topically, and the arsphenamines parenterally, alone or in combination, causes the rapid disappearance of the spirochetes from the lesions. Coincidentally with their destruction comes clinical improvement.

6. The fusospirochetal complex when injected into animals uniformally produces lesions of a constant character similar to those observed in man.

7. Lastly and of most importance, the acute penetrating and chronic progressive forms of this disease cannot be controlled except by the topical, parenteral or combined administration of the specifics.

The foregoing facts are known by students of spirochetoses.

The authors have ignored the spirochetal issue and have based their deductions on their studies of the "fusiform bacillus." We will discuss that "organism" and briefly point out the "fusiform problem." In that the authors have failed to take their readers into their confidence as to the bacteriologic status of their "organism" and have so prudently withheld associated information we have been unable to form a concept of it, cannot conjecture as to its taxonomic position and consequently are quite unable to discuss the "bacterium" per se. We have only the authors' implication that they were dealing with a "fusiform bacillus." This is hardly sufficient in view of the impossibility of finding any two authorities who will agree as to what a fusiform bacillus is.

Even if the morphologic, cultural, dissociative and ecologic characteristics had been determined, its taxonomic position would have to remain *sub judice* until some unanimity of opinion has been reached as to what the fusiform bacilli are. While some doubt the existence of the fusiform bacilli, the majority of workers believe there are many kinds. In view of the controversy that exists in the literature, it would be interesting to have the authors' statement as to the motility, oxygen requirements, morphology, arsenic tolerance, method of reproduction and staining reactions of their organism. It would be of further interest to know whether or not they observed pleomorphic or dissociative forms in their cultures.

It seems hardly possible that the authors could have conceived of producing a fusospirochetal infection by the use of the fusiform bacilli alone or in association with the cocci, for so far as we have been able to determine these organisms have never been indicted as the etiologic agents that produce this disease. It appears that their observations are in agreement with those of the American Society of Bacteriologists as published in the Determinative Bacteriology compiled by Bergy in 1925, which states that the fusiform bacillus associated with Borrelia in Vincent's angina, ulcerative stomatitis, gangrene and wounds is not pathogenic. In the last analysis the onus probandi would seem to rest on those who maintain that these organisms are not pathogenic.

In that the authors base their therapeutic deductions from the study of nonpathogenic organisms and the observation of five, fortunately self limited cases of fusospirochetal disease, we feel that their efforts have been more literary than scientific; they should, however, be of definite negative value in promoting interest in the problem of the spirochetoses. The studies per se are not convincing. If the healing of the oral spirochetoses were as simple as the authors imply, it hardly seems possible that this disease would have by itself developed a more diversified therapeutic armamentarium than all the other infections of the buccopharyngeal cavity put together. The arsenicals were first introduced into the treatment of the spirochetoses by the Chinese, 2,000 years B. C. Since then many treatments have come and gone but the specifics are still with us and, when used, except in the case of noma, produce satisfactory results. Since 90 per cent of the acute cases heal spontaneously or subside into a chronic inactive state without treatment, it is at once apparent why so many "cures" have been periodically advanced by those who have had limited experience with this disease. Years of experience in the treatment of the spirochetoses convince us that most acute cases heal spontaneously in spite of the "usual treatment" but that the acute penetrating and chronic forms cannot be controlled except by the use of the specifics. It is impossible to prognosticate which individuals will develop a severe infection and until some one can more satisfactorily solve the problem of the "tenth case" it seems advisable to continue the routine use of the specifics.

L. J. BELDING, M.D.,
P. H. BELDING, D.D.S.,
Waucoma, Iowa.

[NOTE.—The letter was sent to Dr. H. H. Lichtenberg, who replies:]

To the Editor:—It appears that the Drs. Belding believe our report was not made in good faith.

The sixteen (not five) cases of acute ulcerative stomatitis we reported were only of the severe form. None of them went on to a chronic course. We allowed them to run their course untreated because previous reports of cases treated with various therapeutic agents were all lacking in a comparable group of simultaneously observed control cases. An evaluation of a therapeutic procedure in any self-limited disease cannot be made unless this condition is fulfilled. We were therefore interested in observing the natural course of this disease in children and comparing it with the claims made for the various drugs.

Since the writing of our communication, there have appeared two short articles by the Drs. Belding which explain more fully what they mean by chronic specific gingivitis (Specific Gingivitis, *J. A. Dent. A.* **19**:1995-1997 [Nov.] 1932; The

Relationship of Borrelia Vincenti to Oral Disease, Dental Cosmos **74**:1218-1219 [Dec.] 1932). These cases have an incipient onset and are not recognized until well advanced. They describe "a dissolution of the continuity of the gingival ligament, edema, retraction of the gums, absorption of the interdental papillae and bleeding," . . . "if unchecked, leads to the complete destruction of the bony socket and ultimate loss of the teeth." We have not encountered in children this condition ordinarily or formerly called pyorrhea alveolaris. It is probably an entirely different disease from acute ulcerative stomatitis, and we do not mean that any deductions as to the treatment of this condition should be drawn from our results with the acute ulcerative stomatitis in children. Since the Vincent organisms are found only in dentulous mouths, probably because they have here the partial anaerobic conditions necessary for their growth, since their numbers increase in man and guinea-pig both with clean surgical trauma and since the lesions heal up rapidly with great diminution in their numbers, we cannot agree with these authors that the "Borrelia vincenti is always pathogenic, its presence in the oral cavity is pathognomonic of an existing gingivitis either gross or microscopic."

HENRY H. LICHTENBERG, M.D., New York.

"THE DIATHERMY TREATMENT OF DEMENTIA PARALYTICA"

To the Editor:—In THE JOURNAL, June 3, appeared a paper on this subject by Freeman, Fong and Rosenberg.

I have always emphasized that in most instances deteriorated, demented patients will not go into a remission and will not improve. Early in my work the malarial type of fever curve was abandoned as a model. Long sustained temperatures with a high plateau ranging above 103.5 F. for eight hours and above 105.8 and not exceeding 107 for four hours, have been employed and recommended by us for at least two years. I will return to the rationale of this a little later.

The average number of treatments has not been confined to ten or twelve. On the contrary, I believe that the number of treatments necessary to obtain results in a case of dementia paralytica average about twenty. Most remissions take place after the fifteenth, twenty-fifth and thirty-fifth treatment. I never abandon a case until the patient has had at least fifty treatments. Lately, I have discovered that even higher temperatures than 105.8 are well borne, and I am treating a number of robust individuals now at temperatures ranging between 107.6 and 108. I have even sustained a fever of 108.5 for four hours in selected individuals. This may sound incredible to some, but I am sure that fever produced by physical agents differs widely from fever caused by toxins.

Bessemans of the University of Ghent, Belgium, and Warren of Rochester, N. Y., in experiments conducted with tissues infected with spirochetes, have shown that temperatures of 41 C. (105.8 F.) sustained for two hours or 42 C. (107.6 F.), sustained for one hour are definitely spirocheticidal both in vivo and in the human organism. Bessemans has even conducted his researches to the point of experimenting with two adjacent syphilitic lesions. One was heated with diathermy, while the other chancre, when he dealt with duplicate chancres, or the other secondary lesion, when secondaries were used, was allowed to go untreated. The subcutaneous temperatures were carefully measured by means of a thermocouple. Thus he found that the heated lesion not only showed no spirochetes, when examined by means of the ultramicroscope, but also that the rabbit's cornea could not be infected with the serum derived from such a treated lesion, which might possibly contain some virulent spirochetes. The untreated lesions grew rapidly and developed in the usual manner. All in all, 446 cases have been reported in the literature. Dr. Freeman has neglected the cases of Epstein and Paul and the cases of Jacobson. Summarizing all these, 133 have been reported to be in an absolute state of remissions, while 153 have been discharged from the hospitals. In the latter group there was not a complete remission, since the patients are not now earning their living by constructive work.

Therefore I believe that Dr. Freeman and his associates have again proved just what I have always contended, that comparatively short nonsustained temperatures and comparatively few fever treatments are useless, and that the optimal range of fever of this type for therapeutic purposes lies above 103.5 F. Furthermore, this temperature should be maintained for at least eight hours, four of which should range above 105.8.

If this work of Freeman proves anything at all, it emphasizes the necessity of adapting medical procedures to the specific needs of the individual patient, and not being satisfied with a routine proceedure in cases which are hopeless from the beginning.

CLARENCE A. NEYMANN, M.D., Chicago.

[NOTE.—The letter was referred to Dr. Freeman, who replies:]

To the Editor:—Dr. Neymann may be correct in his contentions (*a*) that the patients were of an unfavorable type and (*b*) that the treatment was inadequate according to present standards. My associates and I suggested the same possible objections. We know, however, that by malaria we can produce an arrest in most cases at any period of the disease, even the most demented.

Before we can accept Dr. Neymann's statements of the remarkable therapeutic effects of diathermy we must have (1) a prolonged period of observation and (2) histologic verification of arrest of the syphilitic process in the brain.

Eleven years' experience with malaria permits us to draw satisfactory conclusions, since these criteria have been met. Five years' experience with diathermy has given us no encouragement.

WALTER FREEMAN, M.D., Washington, D. C.

"POSTOPERATIVE CONTROL OF NAUSEA, DISTENTION AND VOMITING"

To the Editor:—I read with interest the article on "The Postoperative Control of Distention, Nausea and Vomiting" by Dr. Paine et al. in the June 17 issue of THE JOURNAL.

In April, 1923, I published an article (*Surgery, Gynecology and Obstetrics*, pp. 572-573) representing a similar experiment. I had tried the tube both nasally and by mouth. As I had some cases that should keep the tube in for several days, I found that it was better by mouth. Since the writing of this article, I have used the tube in many cases with excellent results.

I think that these writers should be complimented for their exacting work and their calling attention to the use of the nasal catheter suction siphonage.

CONSTANTINE ODÉN, M.D., Muskegon, Mich.

EPILEPSY ASSOCIATED WITH HYPERINSULINISM

To the Editor:—In THE JOURNAL, February 4, page 321, is an article entitled "Epilepsy and Narcolepsy Associated with Hyperinsulinism," by Dr. Searle Harris of Birmingham, Ala. These cases are interesting. Since 1924, when Dr. Harris reported the first case of hyperinsulinism associated with epilepsy, many more cases have been reported in THE JOURNAL. Since 1929 I have been studying such cases and have made the following observations: 1. These patients, regardless of the type of epilepsy, show a low blood sugar; especially is this true prior to the epileptic seizure. These blood sugars range from

35 to 65 mg. per hundred cubic centimeters of blood. 2. Low blood sugars mean an anoxemia, alkalosis and edema of the brain, which increases the possibility of convulsions. 3. High blood sugars mean acidosis and dehydration, which decrease the possibility of convulsions. 4. In trying to increase the blood sugar of epileptic patients, one combines the dehydration method of Temple Fay and the acidosis method of Cobb and Lennox.

More work should be centered about the blood sugar in epileptic patients.

MARVIN SANDORF, M.D., Johnson City, Tenn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACTION OF PENTNUCLEOTIDES IN NEUTROPENIA

To the Editor:—1. What is the action of pentnucleotides on the hematopoietic system? Of course it increases the number of polymorphonuclears, but what is the biochemical explanation for the stimulative effect on white blood cell formation; also is there any other effect on the blood-forming system? 2. How are the pentnucleotides prepared that are supplied in ampules for the treatment of agranulocytosis, and is there any danger of deterioration? T. L. HOWDEN, M.D., St. Joseph, Mo.

ANSWER.—1. It has been rather conclusively demonstrated that nucleic acid and its derivatives have a specific maturative and chemotactic influence on the neutrophil leukocytes. This has been demonstrated in experimental work by the increase in this type of cell in the peripheral blood and an increasing hyperplasia of myeloid elements in the bone marrow in rabbits. (Doan, Zerfas, Warren and Ames: *J. Exper. Med.* **47**:403 [March] 1928). Furthermore, under long-continued chronic stimulation with injections of sodium nucleinate, extramedullary myelopoiesis has been produced in both the kidney and the spleen. These extramedullary foci show only neutrophil myelocytes without the presence of eosinophils, basophils, megacaryocytes or erythrocytes, which occur ordinarily in conjunction with myelopoiesis in the bone marrow.

The theoretical explanation and basis for this action is as follows: Sabin and her associates (Sabin, Doan, Cunningham and Kindwall: *Bull. Johns Hopkins Hosp.* **37**:14 [July] 1925) have shown that there is a periodic increase in "nonmotile" neutrophilic granulocytes in the peripheral blood from time to time during the day. The disintegration of these cells releases primarily nucleic acid and its degradation products. Altmann originally isolated nucleic acid for the first time in 1877 from Miescher's "nuclein," obtained from the original residue of nuclear débris constituting the "pus" so readily available from human patients in those days of septic surgery. In 1924, Henry Jackson demonstrated the presence of pentose nucleotides in human blood. Thus, it is at least possible that the disintegration and turnover of granulocytes in the body may under ordinary circumstances furnish the stimulus through the nucleic acid for the delivery of replacements from the bone marrow. Pentnucleotide is proposed for use in granulocytopenia (idiopathic malignant neutropenia; agranulocytosis, with or without angina). Its usefulness in other conditions such as sepsis accompanied by leukopenia has not been demonstrated.

2. The method of preparation is described in N. N. R. 1933. The nucleotide is prepared by alkaline hydrolysis of yeast nucleic acid (N. N. R.) at room temperature according to the technic of Perkins and Jones (*J. Biol. Chem.* **62**:557 [Jan.] 1925). The solution, after hydrolysis is complete, is made acid with acetic acid and the crude nucleotide precipitated as the lead salt, which in turn is decomposed with hydrogen sulphide and the filtrate containing the purified nucleotide is evaporated under diminished pressure at a maximum temperature of 50 C. to a small volume and neutralized with sodium hydroxide. From the resulting concentrated solution, sodium nucleotide is removed by absolute alcohol and dissolved in distilled water, and sufficient tricresol is added to make a 0.3 per cent solution. The final solution contains about 8 per cent of the sodium salts of what appear to be four nucleotides. After it has stood in an icebox for two weeks the p_H is adjusted to 7.2 and the solution is run through a Berkefeld filter directly into small sterile ampules. (Jackson, Parker, Rinehart and Taylor, THE JOURNAL, Nov. 14, 1931, p. 1436). So far as is known, this material does not deteriorate after preparation.

RENAL GLYCOSURIA

To the Editor:—I am puzzled as to how best to treat a niece of mine, aged 20, always a bright student, usually close to the head of her class, and now ready for the senior year in college. Three years ago, when she first entered boarding school, she became enthusiastic in reducing, in the craze then at its height, though she was never fat. As she was leaving for school last fall I found sugar in the urine, yellow after a light meal, red brick-like after a full meal, and then sent her to Duke Hospital, where all examinations were negative except the sugar tolerance test, which was as follows:

	Mg. per Hundred Cubic Centimeters	Urine
Fasting blood	73	0
½ hour	123	3 plus
1 hour	135	3 plus
2 hours	103	3 plus

A month ago I found sugar in the urine ranging from 1.3 to 2.25 per cent, so I sent her back to the same clinic, where she remained five days with everything essentially negative except

Dextrose Tolerance	Blood Sugar, Mg. per Hundred Cubic Centimeters	Urine Sugar, Per Cent	Urine, Cc.
Fasting	100	0.33	200
½ hour	145	unsatisfactory	50
1 hour	167	1.25	22
2 hours	150	0.95	13
3 hours	110	0.40	104
4 hours	100	0.40	105

The urine showed a specific gravity of 1.035, was acid, sugar was 4 plus, albumin plus, there were from 20 to 30 leukocytes per high power field, benzidine was 3 plus, acetone a trace (four days after the menstrual period). Roentgen examination showed no abnormality of the sella turcica. The impression was one of renal glycosuria. The patient was discharged, March 8. Last fall when sugar was first detected, she fainted an hour before the noon meal and again two days ago. Won't you kindly advise me from this brief account your suggestions as to diet and care? Should she eat sweets promiscuously and in abundance? Her ideal weight is 128 pounds (58 Kg.), her present weight 114 pounds (51.7 Kg.) and it has been from 110 to 116 pounds (50 to 52.6 Kg.) for the past year, never in her life quite up to the standard weight. I shall appreciate your advice. Please omit name. M.D., Virginia.

ANSWER.—A diagnosis of renal glycosuria is based on: (1) the appearance of glycosuria with a normal or low blood sugar, (2) the fact that there is no constant or definite relationship between carbohydrate intake and dextrose excretion, (3) persistence of the glycosuria, (4) freedom from the symptoms of diabetes, (5) the fact that under observation the patient does not develop diabetes mellitus, and (6) the fact that the blood sugar curve after the ingestion of dextrose is normal. The blood sugar curve does not resemble that usually found in diabetes mellitus. It would seem advisable to exclude any disease of the thyroid or other ductless glands. Assuming this already to have been done, the patient should be allowed to have a normal diet. However, an early mild diabetes mellitus cannot as yet be completely excluded, and she should not be permitted to eat sweets promiscuously and should be under rather constant supervision in order to detect any possible early symptoms or signs of diabetes mellitus.

OVULATION AND FERTILIZATION

To the Editor:—1. Are the spermatozoa capable of fertilizing the ovum forty-eight hours after entering the female genitalia? 2. Is it proved that the unmated ovum retains its germinating ability for less than thirty-six hours? 3. Has the time of ovulation been proved? Is the statement that "ovulation occurs twelve to sixteen days before menstruation" correct and proved? Please omit name. M.D., Maine.

ANSWER.—1. In the rabbit, sperms live at least ten hours. Hammond and Asdell found the range of fertility of sperms to be between twenty-four and thirty hours (fertility tested after artificial insemination). Two days after coitus, various authors found mostly dead sperms in the rabbit. In the human being, motile sperms were found seven and one-half days after coitus. However, the motility of these sperms diminished rapidly after thirty-six hours. Most of the sperms were dead at this time. It should be recalled that motility in sperms does not mean that such sperms have fertilizing properties. Whereas there are possibly notable exceptions, such as in the bat, in which copulation and fertilization are separated by five or six months, students are agreed that, in the human species, sperms are dead twenty-four hours after coitus. If by the question is meant the power of surviving sperms to fertilize when the sperms have been kept in a suitable buffered solution in vitro (and under otherwise favorable conditions), it can be said that such sperms have retained their fertilizing power in some animals for eight or nine days.

2. The unfertilized ovum is short lived according to the best evidence (including the human ovum). Such unfertilized ova

hardly live more than forty-eight hours. This statement implies that an unfertilized ovum could be fertilized thirty-six hours after liberation by the ovary and could germinate subsequently.

3. In five human cases the estimated time of ovulation (the ova having been recovered) was between the twelfth and the fourteenth day from the onset of the previous menses. In another instance the time of ovulation was placed on the eighteenth day after the first signs of menstruation. In the monkey, ovulation usually occurs on the thirteenth or fourteenth day. Ovulation may not only vary beyond these limits but even not occur although the menstrual periods occur regularly. The statement that "ovulation occurs twelve to sixteen days before menstruation" is fairly correct.

"Sex and Internal Secretions" edited by Edgar Allen, Baltimore, Williams & Wilkins Company, 1932, gives further information and bibliographic references.

TUBERCULOSIS AND PREGNANCY

To the Editor:—As far as I can ascertain, there is a considerable difference in opinion as to the advisability of interrupting pregnancy in arrested tuberculous cases. An interesting note from Paris in THE JOURNAL, January 21, would seem to indicate that final results are much better with interruption when done between the third and fourth month of pregnancy. Can you give me the latest thought and advice on this? I am confronted with the case of a woman, aged 34, with two living children, one 12 years of age, one 9. While they are not robust, the children seem to get along fairly well. Some years ago the woman was diagnosed as tuberculous by a competent man. She at that time had pleurisy with effusion and on moving into this district from Massachusetts had an evening elevation of temperature, which continued for a year. During this year she was mainly in bed at her home, which is admirably suited for such treatment. During the past year she has been able to be up and about and, with reasonable care against overexertion, gets along fairly well. Physical signs are lacking and roentgen examination of the lungs gives negative results. There has been no rise in temperature for the past year. She weighed 125½ pounds (57 Kg.) in May, 1932. The last menses occurred, Oct. 25, 1932. Dec. 3, 1932, her weight was 124 pounds (56.2 Kg.). Jan. 5, 1933, it was 123 pounds (55.8 Kg.). Physical signs of pregnancy are positive. She had some nausea in the beginning but has not had any for the past month. She is very anxious to go through with the pregnancy. I am concerned with the loss of weight. If an abortion is to be done, now is a good time. Please advise.

M.D., New Jersey.

ANSWER.—In this particular patient it seems that, although the usual three years of arrested tuberculosis has not expired, the patient is in sufficiently good condition to justify her in her attempt to carry her child to term and this procedure can be recommended. However, the usual treatment for tuberculosis, including diet, graduated exercises, graduated exposure to sunlight, and rest, ought to be punctiliously carried out during pregnancy.

The loss of weight is not of great concern, as many healthy women lose weight in the early months of pregnancy and put it on later. The treatment mentioned would take care of this matter.

While therapeutic abortion would not be recommended in this patient, if it should be decided on everything should be done under local anesthesia aided by morphine—no inhalation anesthesia of any kind being used.

AZOOSPERMIA

To the Editor:—My brother is 28 years old and has been married seven years. During this time his wife has never been pregnant, although they have used no contraceptive measures for the past two years. I have examined several condom specimens within an hour or two after coitus and have never found any spermatozoa. My brother is a healthy, husky athletic man with no physical defects; he has never had any venereal disease, mumps or other serious illness. No other members of the family are sterile. His wife is also in excellent health. Can you offer any suggestions as to possible etiology, prognosis and treatment? Please omit name.

M.D., New York.

ANSWER.—In every case of azoospermia, the first thing to determine is whether the testicles themselves do not produce any spermatozoa, whether the various genital tubes are occluded, or whether the two conditions coexist. There are other conditions besides gonorrhea that may cause closure of the tubes. To make this differential diagnosis, a rather large aspirating needle should be inserted into the testicle and some of the testicular fluid withdrawn for examination. If spermatozoa (even if they are immotile) are found in this aspirated fluid, one can definitely diagnose that the tubes are occluded and treat accordingly, generally by an epididymovasostomy. If no spermatozoa are found, one may assume that the spermatogenic function of the testicles is at fault. In this case one may experimentally put the patient on tablets of the anterior lobe of the pituitary, starting with 5 grains (0.3 Gm.) four times a day and graduately increasing until the patient takes 20 grains (1.3 Gm.) four times a day; that is, 80 grains (5.2 Gm.) a day. With this an outdoor life and a diet made up largely of milk and eggs is advisable. If the metabolism test is much below normal, thyroid extract may be given in conjunction with the pituitary tablets. Repeated condom examinations after a long period of continence should be made.

MERBAPHEN (NOVASUROL) AND MERSALYL (SALYRGAN) IN EDEMA

To the Editor:—Please discuss the clinical results of novasurol and salyrgan in cardiac dropsy. Which is the more efficacious and less toxic? Please omit name.

M.D., Texas.

ANSWER.—The organic mercury compounds merbaphen (novasurol) and mersalyl (salyrgan) are useful drugs in the treatment of cardiac dropsy. These drugs differ in their toxic reactions. Merbaphen can be given subcutaneously or intramuscularly with little or no local reaction, while mersalyl may cause marked local reactions, the effect of which may lead to actual sloughing. On the other hand, it is now generally agreed that general toxic reactions are more frequent and more marked following merbaphen than after mersalyl. When intravenous injection offers no difficulties, mersalyl therefore is the drug of choice. However, when the peripheral veins are difficult to inject, as when peripheral edema is marked, merbaphen injected intramuscularly may give satisfactory diuretic results. A safe general rule is to give an initial dose of 0.5 cc. of either drug. If there are no ill effects, this dose can be increased to 2 cc. and repeated every three or four days until the dropsy is controlled. If given more frequently, these drugs may have a toxic action on the kidneys. The simultaneous administration of the acid salts, calcium chloride, ammonium chloride and ammonium nitrate increases their diuretic action. The prompt and efficient action of these organic mercury compounds alone or in combination with other diuretic substances has shown that a burden can be removed from a weakened heart by the rapid resolution of dependent edema.

CHROMIDROSIS AND CYANEPHIDROSIS

To the Editor:—Last summer I was consulted by a woman patient who told me that, when she washed her hands and forearms, or when she took a bath, the water turned blue. Thinking that it was caused by the soap that she used, she took baths without soap, with the same result. This disorder is called "cyanephidrosis." I know nothing of this condition and ask that you enlighten me.

MORRISS HENRY, M.D., Helena, Ark.

ANSWER.—Every possible attempt should be made first to make certain that the blueness of the water is not due to some natural cause. Extremely hard water is likely to turn blue in the presence of various chemicals either in soap or on the surface of the body.

The first indication is to make sure that it is a real case of cyanephidrosis, blue sweat. A portion of the skin known to be involved should be cleansed carefully with soap and water by the physician or his assistant, then washed with ether, this allowed to evaporate, and collodion applied. If the blue color reappears under this, or when this is removed by the physician, the case may be accepted as genuine.

True chromidrosis is very rare and the black form is most common, the blue form coming next in frequency. In most cases the sweat is colorless when it first appears and then turns blue, leaving a deposit of dustlike particles about the sweat pores. These are soluble in oils or fat solvents more readily than in water, leading to the suspicion that the sebaceous glands may be involved; but the rapidity with which the color is produced, its deposit about the sweat pores rather than about the hair follicles, and its close connection with the activity of the sweat glands allays such a suspicion. The fact that the sweat glands themselves produce oil makes such an explanation unnecessary.

Various explanations of the nature of the blue deposits have been made. The common one, credited to Bizio and Hoffmann, is that it is indigo, derived from indican, formed in the intestine. A reaction for indigo is not always to be obtained, however. Collman and Scherer call it ferrous phosphate and Fordos states that it is pyocyanine. Furthermore, blue sweat has been observed in copper workers, though the common color of their perspiration is green.

Except for the last mentioned class, all patients with cyanephidrosis have been neurotic individuals, mostly women. Pelvic and menstrual disorders have been associated in some cases. The intestinal conditions should be studied, including the flora of the tract. Constipation should be corrected and any underlying nervous condition treated.

HEADACHE AND MENSTRUATION

To the Editor:—A woman, aged 27, married, with one child aged 15 months, suffers from unilateral sick headache, initiated by a tired feeling and, at times, depression. The pain is felt through the right eye and the right side of the head to the occiput. There is no tenderness of the scalp or neck and no vertigo. The attacks usually end in sleep. They are most likely to occur after she has been very busy and are almost certain to occur after entertaining. The patient first menstruated at 13. She had sick headaches from 14 to 16, and they became severe after 16. The patient was unable to associate in her mind the attacks with her periods. The intervals between periods vary from twenty-one to twenty-eight days. The periods are of six days' duration and, prior to pregnancy, four days. There is a free flow for three days. They are without discomfort, though she had painful menstruation before pregnancy. Labor was normal. The headaches occur irregularly between one and three weeks apart and last from twenty-four to forty-eight hours. During the nine months of pregnancy and the first six months of the nursing period the patient had but three attacks, one early in pregnancy, one immediately after return home from the hospital, and one in April, 1932 (having nursed the baby from the previous October). During this time menstruation did not appear. From April to July (the end of the nursing period) and up to the present, the patient has menstruated every three to four weeks. She had headaches as of old (except less severe) from April on until July, much milder than in the past but since July again increasing in severity. Does the practical disappearance of this affliction during such a period of suspended menses suggest any direct manner of attack by endocrine therapy? The general health is good. Physical examination is negative. Please omit name and address.

M.D., California.

ANSWER.—In spite of the apparent relationship between the presence of menstruation and the headaches, it is highly doubtful whether endocrine therapy will be of any avail except psychically.

Just what glandular products to try is difficult to say. During the menstrual cycle, the important hormones present in the blood are the female sex hormone, or folliculin in the first half and progestin in the second half of the cycle. It is hardly likely that these are responsible for the headaches, and, even if they were, no way of eliminating them is known except by pregnancy. On the other hand, during gestation, large amounts of the anterior pituitary hormones circulate in the blood. It may be that the presence of large quantities of these hormones prevents the appearance of the headaches; but this also is conjectural. One way to try to find out is to administer ampules of anterior pituitary hormones hypodermically every day for a number of weeks. However, the anterior pituitary hormones are most likely not the important factor in this case because the headaches subsided not only during pregnancy but also during the first six months of nursing.

The eyes, ears and sinuses should be carefully examined, but it may be that these headaches are similar to migraine and therefore difficult to overcome.

POSTPARTUM EXERCISES

To the Editor:—As there appears to be a marked difference of opinion with regard to the benefits of postpartum exercises, will you give me a routine for the normal puerperium? Kindly omit name.

M.D., Michigan.

ANSWER.—Beginning on the second day after delivery, patients should be placed in the Fowler position part of the day. In addition, they should lie on their abdomen for about fifteen to twenty minutes three or four times a day. These changes in posture help to maintain the downward drainage of the lochia and keep the vagina free of lochia, thereby diminishing the chances of infection that may result when the cervix lies buried in a pool of débris and bacteria. On the third or fourth day of the puerperium, patients may have a light general massage of the entire body except the abdomen and the breasts. This is passive exercise. Two days later, systematic exercises involving the arms, legs and abdomen are begun and carried out while the patient is in bed. These exercises improve the circulation, strengthen the tone of the abdominal muscles and hasten the patient's general recovery. The following exercises are recommended: The pillows are entirely removed or one pillow is placed under the patient's back. A series of deep breaths is taken. During inspiration the arms, which lie at the sides, are slowly raised either above the head or upward toward the ceiling. On expiration the arms are slowly returned to their original position. Then the head is raised and lowered a number of times, and following this the extended legs are elevated and lowered one at a time and later the two at the same time. This is followed by flexion of both the thigh and the knee of each leg and then of the two legs together. Next the flexed thighs are abducted a number of times. Then the patient assumes a sitting position with the arms extended along the sides of the body and, if the patient is able, she should repeat this exercise with the hands behind her head. This is followed by the knee-chest position, which should be properly carried out and maintained for gradually increasing periods beginning with a five minute period. After the third week the patient may be instructed to perform the "monkey trot," that is, walk fast on both hands and feet a number of times a day, or she may be asked to practice the "mule kick." In all cases the exercises should consume only a few minutes at the start, and each day the time should be increased, depending on the patient's general feeling and her endurance. If the exercises increase or bring about a return of red lochia, they should be stopped for a few days.

TENOSYNOVITIS AND MYOSITIS

To the Editor:—A man, aged 27, has had a sensation of friction on flexing certain muscles for the past four years. It started in both knees and next involved the right elbow, then the left elbow and now is present in all those joints and also the left shoulder. On palpation, flexion and extension with the antagonistic muscles tensed gives a sensation of crepitus and the creaking can be heard. There has been no swelling or any other evidence of inflammation in either the muscles or the joints. He had gonorrheal urethritis six years ago, which was treated and apparently cured. He shows urticarial lesions irregularly placed on the arms and trunk. He works as a rancher. Any information on the cause and treatment of this condition would be appreciated. Please omit name.

M.D., South Dakota.

ANSWER.—This case may be classified as multiple tenosynovitis, possibly in a group called occupational synovitis. There may be an element of multiple myositis, which is analogous to such conditions as rider's knee, soldier's shoulder, fencer's bone and dancer's bone. Other conditions that come to mind are interstitial calcinosis, arthritis, myositis, synovitis, myositis ossificans, myositis ossificans para-arthritica and occupational tenosynovitis due to repeated injuries.

Many of these cases follow infectious disease and are not of traumatic origin. This patient may be developing a generalized calcinosis or generalized tenosynovitis. There may be an element of myofasciitis or fibrositis ossificans progressiva.

These various conditions are caused by infection and trauma. Trauma may be one severe blow or multiple minimal strains or sprains. The occupation of a rancher may account for these.

The tendon in a tendon sheath may be compared to an umbrella in an umbrella cover. If there is no free play of a tendon in its sheath, palpable and audible crepitus may be noted when the tendon is active. There may be a dry tenosynovitis.

In the treatment, the first consideration is rest. This may necessitate a change of occupation. The patient should note those activities which cause crepitus and discomfort and avoid them, just as one should avoid those foods which are known to cause gastric or intestinal disturbances. The application of a plaster-of-paris cast for a few days would make a good test of whether this form of treatment is applicable in this case. Later a removable splint should be tried. The splint should be removed twice daily for radiant heat and diathermy. Massage should be very cautiously tried. Its continued use depends on the response.

EFFECTS OF IODINE ON INSULIN IN HYPERTENSION AND DIABETES

To the Editor:—The wife of a local colleague had a cerebral hemorrhage seven weeks ago and now has hemiplegia on the right side. She is being given potassium iodide in fairly large doses at present. She has also diabetes mellitus and takes 40 units of insulin daily. Jensen, Schock and Sollers (J. Biol. Chem. **98**: 93 [Oct.] 1932) have stated that a definite amount of iodine will permanently inactivate insulin. What influence should this report have on the treatment of such a case? I should be pleased to receive any information possible relative to the coincidence of hypertension and diabetes and also the treatment of hemiplegia due to cerebral hemorrhage either with or without complicating diabetic conditions.

M.D., Ohio.

ANSWER.—The experiments cited on the inactivation of insulin by iodine were conducted in a test tube, not in an animal, and were carried out with standard solutions of iodine rather than with a solution of potassium iodide. One milligram of amorphous insulin represents about 15 units and of crystalline insulin about 24 to 27 units and it was found that this quantity of insulin was rendered inactive by 0.3 cc. of hundredth normal iodine solution, or approximately 0.4 mg. of iodine. It is true that in 1 Gm. of potassium iodide there would be 0.765 Gm. of iodine, but the iodine in potassium iodide is not in a dissociable, reactive form and is not therefore likely to cause inactivation of insulin, which presumably the free iodine accomplishes possibly at the disulphide linkage, as suggested by Jensen and his co-workers. It is improbable that free iodine is set free in the body when potassium iodide is given, because some of the toxic effects of free iodine would be manifested.

There has apparently been no suggestion of inactivation of insulin with diabetic patients taking potassium iodide for bron-

chitis or syphilis, or with cases of hyperthyroidism when compound solution of iodine is employed.

Diabetic patients live so long and die so old that at present approximately half of the deaths of diabetic patients are due to arteriosclerotic complications, chiefly in the legs and heart, less commonly in the head and kidneys; and in many of these conditions high blood pressure is a factor.

For the treatment of hemiplegia due to cerebral hemorrhage the questioner is referred to the standard medical treatises. If the condition is associated with diabetes, insulin can be used with advantage under close supervision, but only with frequent tests of the urine and blood sugar, because hypoglycemia as well as rapid falls in the blood sugar must be avoided.

POISONING IN TINNING INDUSTRY

To the Editor:—A man, aged 34, with a severe irritated condition of the upper respiratory passages, especially the nasal mucous membrane, has no apparent constitutional symptoms. He is a tinner by trade, occupied in retinning cans. His procedure is to dip cans that have been "fluxed" with a mixture of hydrochloric acid and pure zinc into a vat of pure molten block tin. When this is done a heavy cloud of acid smelling fumes arise, which he is unable to avoid inhaling. He has tried some type of mask and finds that the fumes seem to condense under the mask, causing a dermatitis. The questions he would like to have settled are: 1. Is there any danger of absorption of any of the materials or combination of materials used in this process that might be the cause of some type of chemical poisoning? 2. Is there any particular type of mask he could wear to avoid the irritation of his skin and mucous membranes? I believe the condition solely one of surface irritation from the fumes of hydrochloric acid but would appreciate your opinion on the matter. Please omit name.

M.D., Maryland.

ANSWER.—Respiratory inflammation is a reasonable expectancy in this operation. Although the terms "pure zinc" and "pure molten block tin" appear in the query, such purity is not always represented by facts. Arsenic as an impurity in traces has rarely led to poisoning in which respiratory inflammation (especially of the nasal mucous membranes) is a feature. Zinc chloride may be used along with the acids in the preparatory processes. In the tin, lead has, in the past, been present at least as an impurity, in quantities sufficient to produce plumbism. Assuming that the metals as used are in fact pure, the respiratory disturbances may be accounted for as the result of acid vapors and zinc fumes. The tin is essentially harmless, although the fumes from any molten metal may not be wholly exculpated. The formation of some zinc chloride under the conditions stipulated in the query is probable. As for the direct questions:

1. Systemic poisoning may arise if other metals (arsenic, lead) are present in appreciable quantities as impurities. Acid vapors and zinc fumes are unlikely to cause direful systemic disease, although the zinc may lead to "zinc chills"—an acute affair; and the acids may lead to gastric hyperacidity and possibly to ulceration.

2. Best protection is likely to be obtained through the use of the hose type of mask rather than the filter type. The latter masks may in truth be shown to be efficient, but the amount of care required to keep them so is sometimes onerous. A discussion of the efficacy of respirators may be found in the February, 1933, issue of *National Safety News* (page 21) and U. S. Public Health Bulletin 177, 1928.

Local suction apparatus at the rim of the molten metal tank is practical. A discussion of this procedure for another industry may be found in *Public Health Reports* **43**:2330 (Sept. 7) 1928.

SURPLUS TISSUE IN ABDOMINAL WALL AFTER PREGNANCY

To the Editor:—A woman, aged 30, who has had two children weighing 10 and 11 pounds (4.5 and 5 Kg.), respectively, at birth, shows a surplus of skin folds over her abdomen, plus the usual scarring caused by the previous gravid condition. She is slim and therefore feels that the surplus tissue is disfiguring. I would appreciate any suggestion that you may offer as to treatment or operative procedure, if any. Please omit name.

M.D., Chicago.

ANSWER.—The redundant skin may be held together with a girdle without operation. Operation for such an excess of skin carries a minimum of risk, the greatest being that of infection. The operation may be done by a transverse excision when the lower part of the abdomen is pendulous. In other cases a vertical excision may be performed. The only objection to the vertical incisions is that they may have to go above the umbilicus. If this is not desirable, two vertical excisions may be performed one on each side of the abdomen. The amount of skin to be removed varies, but the sutured edges should come together without tension or leaving wrinkles. Careful approximation must be obtained or there may be an objectionable scar. The individual longitudinal scars resulting from pregnancy are usually too numerous to remove. This might be attempted in a few instances of very broad scars. As a rule, a good cosmetic result may be expected from a skilful operation.

SWELLING OF SCROTUM AFTER HERNIOTOMY

To the Editor:—Three months ago a modified Bassini type operation was done for right inguinal hernia in a youth, aged 20. At the time of operation, several veins belonging to the pampiniform plexus were incised and ligated. When the floor of the canal was reformed, special precautions were taken to strengthen it and the external ring, as the patient is asthmatic. Possibly the external ring was made too tight. Two days later, swelling of the right scrotum occurred. This receded under support and an ice bag but since then the scrotum has remained about three times the normal size and on several occasions considerably larger, and now the left scrotum also is slightly swollen, both receding slightly under support. What would be the logical cause? What is the prognosis? Is this swelling apt to persist through life? What besides scrotal support and ice bags can be done? Is another operation indicated to relieve a possible constriction of the new external ring? If the condition is circulatory rather than constriction of the vas, what can be done and why has it not cleared up rather than becoming worse, as lately? Please omit name.

M.D., California.

ANSWER.—The swelling of the scrotum following operation may have been due either to a hemorrhage or to venous obstruction. The persistent edema would indicate that there is obstruction to the veins of the cord.

The swelling may persist, become worse or gradually clear up; but, owing to the danger of atrophy of the testicle, reoperation is indicated at this time. The veins of the cord should be freed from pressure and any hematoma should be removed. Careful reconstruction of the inguinal canal with avoidance of any constriction of the cord will almost surely give relief.

The modified Bassini operation with the inclusion of the cord between the imbricated external oblique fascia is not so satisfactory as other methods of repair.

Any method of repair should avoid constriction of the cord even at the expense of a recurrence. However, it is not always possible to determine the constriction that may result from a sharp edge of fascia. After repair is complete it is always wise to examine for a possible constricting sharp edge and correct it by cutting or resuturing the fascia.

VERTIGO

To the Editor:—A man, aged 25, in good physical health, complains of vertigo and of impaired hearing in the left ear. The past history is negative for any severe illness and any definite eye ear, nose and throat infection of note. Vertigo and impaired hearing began about nine months ago and have gradually increased, with short remissions. The vertigo is aggravated by physical exercise and is temporarily relieved (incompletely) by lying down. A change in position from lying to sitting makes objects about the patient seem to whirl around. There is also difficulty in focusing the eyes, and this is more marked when the vertigo is more pronounced. Recently there has been marked difficulty in locating sounds. The patient has a speech difficulty (stammering) that has persisted since childhood. He was also left handed as a child. A diagnosis of labyrinthitis was made and a series of pilocarpine sweats were carried out with no definite change in the condition. From this information can you make any suggestion as to diagnosis or treatment? Please omit name.

M.D., Oklahoma.

ANSWER.—Changes in the blood or the blood pressure may be responsible for the condition noted. A careful blood examination and examination of the blood pressure should be carried out with the idea that possibly a hemorrhage or some other vascular disturbance may have occurred in the inner ear. Serologic tests should also be made to eliminate the possibility of syphilis. If there is much vertigo, complete rest should be enforced for a time, while the various diagnostic measures are being pursued. The use of sedatives such as bromides, and alteratives such as iodides, is sometimes of great benefit.

VARICOSE VEINS IN PREGNANCY

To the Editor:—What is the best treatment for varicose veins in a woman now four months pregnant? She has had three children. The veins are not very extensive but they are causing her enough pain to keep her awake at night. Is it better to have them treated surgically or elastic stockings advised? The veins are in the calves of the legs and also in the thighs. Please omit name.

M.D., Michigan.

ANSWER.—The injection treatment of varicose veins during pregnancy is successful in properly selected cases. The same tests for patency of deep circulation and for latent infection should be used that are employed in any other patient suffering from varicose veins. If the long saphenous vein is palpable and incompetent, it should be ligated close to the saphenofemoral junction, preliminary to injections. Activation of a

latent infection must be carefully avoided. Elastic stockings are useful as additional support but will not obviate the danger of postpartum thrombosis in the dilated veins. Injections are preferably avoided after the seventh month of pregnancy. The physician who undertakes the treatment of varicose veins during pregnancy should be aware of the limitations and dangers of this method and should have had experience in treating veins with injections.

POLLENS IN MICHIGAN

To the Editor:—Kindly inform me as to the pollen content (giant and dwarf ragweed) in Marquette, Mich. Which locality would be better for a tuberculous person affected with hay fever (ragweed) Mackinac Island or Marquette? SAMUEL DESSEN, M.D., Chicago.

ANSWER.—No figures are available on the ragweed pollen content of the air at Marquette, Mich. Investigations at Sault Sainte Marie, Mackinac and Port Arthur, Canada, as well as at numerous other locations farther south, would lead to the belief that ragweed pollen is about as plentiful in Marquette as at Sault Sainte Marie or at Mackinac, where the ragweed pollen content of the air is about one tenth as much as in central Michigan, Wisconsin or Illinois.

There should be complete, or almost complete, freedom from ragweed at Marquette when the winds are off the lake, but the prevailing southwest winds are capable of carrying more than enough pollen to aggravate symptoms in most ragweed-sensitive persons. There would probably be no choice between the two places mentioned for a tuberculous patient with hay fever. Pollen statistics were given in THE JOURNAL, June 10, page 1848.

CHEILITIS AFTER PERSISTING HERPES OF LIP

To the Editor:—A man, aged 30, had a "cold sore" in January, 1930. It healed but always split. He allowed this to continue for four months and then had it cauterized with the actual cautery two or three times. Then he had ultraviolet ray treatments to no avail. He had it cauterized again and still got no results. A surrounding cheilitis developed and he finally went to the Mayo Clinic, where the infiltrated area was removed, but he still has a cheilitis. Boric acid ointment, Lassar's paste, ointment of rose water and tar ointments will not clear it up. What else do you suggest? M.D., Illinois.

ANSWER.—It is possible that the continued inflammation is the result of repeated irritation by cautery and other treatment. In view of the fact that the lesion has already been removed and for that reason any beginning carcinoma has been removed, the lesion might be treated expectantly for a while, only a mild greasy coating, such as oil of theobroma, being used. These suggestions of necessity are of limited value, owing to the fact that it would be better to see such a lesion to express a comprehensive opinion about it.

ETIOLOGY OF REPEATED ABORTIONS

To the Editor:—I note with interest and disappointment your replies to M.D., North Dakota, and M.D., New York, on the etiology of repeated abortions (THE JOURNAL, June 17, p. 1957). Syphilis, so frequently given as a cause in the older textbooks, is rarely seen by the consultant in obstetrics. In order to check this statement I have just reviewed my cases, twenty-one in number, in which two or more spontaneous abortions occurred, and in not one was there a positive Wassermann or Kahn reaction in either husband or wife, nor was there any clinical evidence of syphilis or any microscopic evidence among those cases in which uterine products could be obtained. Certainly in this series syphilis played no part. These were private cases, however, and objection may be raised to my figures on that ground. While it is admittedly true that a similar study of clinic material would probably yield a higher incidence of syphilitic infection, I am convinced that syphilis is more of a coincidence than a true exciting cause. In my experience syphilis does play an important part in prematurity but a negligible one in repeated abortions.

Your reply to these queries did, of course, touch on other causes of repeated abortions, but my complaint is based on undue prominence given syphilis and the minor rôle attributed to other causes.

Chronic infection, especially oral, has been so frequently discussed in the literature of the past ten years in this connection as to be almost an overworked thesis; but apparently its importance remains in the knowledge of the special worker. Pioneer studies were made by Talbot of Massachusetts and Curtis of Chicago, who have reported their observations frequently and convincingly. I brought this to the attention of the dental society of South Carolina (*J. South Carolina Dental A.* **23:** 45, 1930), but mine was a small contribution compared with that of the writers named.

Since reading these answers to your correspondents it has occurred to me that the publication of a study of a large number of repeated abortions might be of special interest and value. I believe syphilis is an incidental infection and, to quote from another answer on page 1957, "it is unfortunate that the presence of syphilis in a patient is often rendered responsible for all the pathologic conditions in that patient."

ROBERT E. SEIBELS, Columbia, S. C.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. *Application should be filed before August 1.* Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

PUERTO RICO: San Juan, Sept. 5. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

Hawaii April Report

Dr. James A. Morgan, secretary, Board of Medical Examiners, Territory of Hawaii, reports the oral and written examination held in Honolulu, April 10-13, 1933. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. Five candidates were examined, 3 of whom passed and 2 failed. One physician was licensed by endorsement. The following colleges were represented:

PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine	(1932)	83.3
Northwestern University Medical School	(1932)	82.7*
University of Nebraska College of Medicine	(1931)	85.1

FAILED	Year Grad.	Per Cent
University of Santo Tomas College of Medicine and Surgery	(1920)	54.2, 60.3

LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Northwestern University Medical School	(1931)	N. B. M. Ex.

*This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

Maine March Report

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held in Portland, March 14-15, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. One physician was licensed by reciprocity and one by endorsement. The following colleges were represented:

PASSED	Year Grad.	Per Cent
College of Medical Evangelists	(1931)	81.9
Harvard University Medical School	(1931)	88.1
Long Island College Hospital	(1897)	75.5
University of Rochester School of Medicine	(1932)	83
Regia Università di Napoli. Facoltà di Medicina e Chirurgia	(1932)	77.7

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Cincinnati College of Medicine	(1923)	Ohio

LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Cornell University Medical College	(1929)	N. B. M. Ex.

Ohio Reciprocity Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports 13 physicians licensed by reciprocity with other states and one physician licensed by endorsement, April 4, 1933. The following colleges were represented:

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1929)	Arkansas
Emory University School of Medicine	(1931)	Georgia
University of Louisville Medical Department	(1914)	Kentucky
Baltimore University School of Medicine	(1905)	W. Virginia
Johns Hopkins University School of Medicine	(1929)	Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931)	Maryland
Detroit College of Medicine and Surgery	(1922)	Michigan
Univ. of Michigan Medical School	(1926), (1927), (1931)	Michigan
St. Louis University School of Medicine	(1930)	Missouri
Memphis Hospital Medical College	(1902)	Mississippi
University of Manitoba Faculty of Medicine	(1930)	W. Virginia

LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
McGill University Faculty of Medicine	(1929)	N. B. M. Ex.

Oklahoma March Report

Dr. J. M. Byrum, secretary, Oklahoma Board of Medical Examiners, reports 7 physicians licensed by reciprocity with other states, and one physician was reregistered, March 14-15, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville School of Medicine		(1925)	Kentucky
Washington University School of Medicine		(1930)	Missouri
Creighton University School of Medicine		(1929)	Mississippi
Ohio Medical University		(1906)	Ohio
Meharry Medical College		(1931)	Tennessee
University of Tennessee College of Medicine		(1931)	Tennessee
Baylor University College of Medicine		(1916)	Texas

Book Notices

Allergy and Immunity in Ophthalmology. By Alan C. Woods, M.D., Associate Professor of Ophthalmology, Johns Hopkins Medical School. The Wilmer Ophthalmological Institute, the Johns Hopkins Hospital and University, Monograph No. 1. Cloth. Price, $2.25. Pp. 176. Baltimore: Johns Hopkins Press, 1933.

This is dedicated by the author to his father, the late Dr. Hiram Woods, who was one of the most universally beloved men in American ophthalmology. There is a foreword by Dr. W. H. Wilmer in which he aptly says, "We are just upon the threshold of our knowledge of immunological adaptation and this monograph pushes open the door a little wider." The author has divided his material into eight chapters, on general considerations on anaphylaxis, allergy and immunity; experimental studies on general ocular immunology; relationship of allergy to focal reactions in the eye; allergic conjunctivitis; antigenic properties and reactions of lens protein and uveal pigment; syphilis; tuberculosis, and therapeutic procedures. Each chapter is concluded by an adequate bibliography and at the close of the book is an author index and a subject index. It is not easy reading because of the nature of the subject, but the well chosen diction puts the matter clearly before the reader who is not immunologically trained. Particularly well done is the chapter on allergy and focal infection, wherein is a clear-headed analysis of the etiologic rôle of focal infection as pertains to ophthalmology. Conclusive proof is lacking that an allergic mechanism may be responsible for inflammatory lesions of the eye from chronic foci of infection, but much of the modern investigative work is pointing in that direction. Two of the best chapters are those dealing with the lens and with uveal pigment, for much of the modern knowledge of the immunologic reactions of those tissues has emanated from the laboratory of the author. The chapter on tuberculosis is sound, as is the treatment outlined for those conditions. The book is worth while for every ophthalmologist.

Vitamins and Other Dietary Essentials. By W. R. Aykroyd, M.D. Cloth. Price, 7/6. Pp. 218. London: William Heinemann, Ltd., 1933.

This book in everyday language gives a brief account of the more popular aspects of the science of dietetics for the general reader and the professional classes whose work lies in other fields. Chapters are devoted to the nutritional essentials, nutritional disorders, diet and teeth, minerals in nutrition, dietary values of foodstuffs, nutrition, physique and health, and the perfect diet. The extent of malnutrition is stressed. Public consciousness of this fact is a first step toward improved nutrition. The author is thoroughly conversant with his subject; his judgment on the practical significance of scientific nutrition is sound.

Industrial Microscopy: A Book Dealing with the Use of the Microscope and the Preparation of Specimens for All Who Use the Microscope in Industry. By Walter Garner, M.Sc., F.R.M.S. Cloth, Price, $5. Pp. 389, with 208 illustrations. New York & London: Isaac Pitman & Sons, 1932.

The main object of this book, as stated in the preface, is to present in one volume an adequate number of methods of microscopic technic of general interest to the technical chemist. With this in mind, the author has attempted to make a judicious arrangement of the subject. Chapters I to VIII and XI contain sections on microscopic technic and accessories, measurement, counting and drawing, photomicrography, microchemical technic, inorganic and organic micro-analysis, and textile and paper-making fibers. The subject matter is presented in a clear and concise manner such as might be expected in a brief introductory book. It is disappointing, however, to note that only a page is devoted to metallography, which is included under accessories as surfacing metals for examination. The remaining chapters, occupying more than half of the volume, deal with botany, microbiology and insects, which will probably be found to be of more or less value for some industrial chemists. The advisability of combining two such dissimilar and highly specialized subjects as bacteriology and crystallography in a brief textbook is in itself problematic. It would seem impossible to do justice to either of them when treated together in a single volume. Obviously, the author's plan in presenting disconnected technics and descriptions of elementary structures without practical applications is apparent in these chapters. Microbiologic technic and entomology occupy some 100 pages. The chapter on bacteria follows closely the similar section appearing in Bergey's Manual of Determinative Bacteriology. The section on the examination of water consists of only a few pages, a treatment entirely inadequate for practical purposes. The chapters on botanic technic and structures are followed by several pages of practical applications on grains and starches, comprising, perhaps, the most useful part of the book. The analyst who has to consult a textbook for the identification of vegetable specimens, the microbiologic examination of water, beverages, foods, meat products, milk, soils, or tanning liquors will find it serviceable.

Cinquante techniques chirurgicales de Henry-Delagenière. Recueillies et rédigées par Yves Delagenière. Paper. Price, 50 francs. Pp. 315, with 63 illustrations. Paris: Masson & Cie, 1933.

This consists of a rather detailed description of the operative technic employed by Delagenière in what may be considered the fifty most common operations in general surgery operations on the stomach, intestine, genito-urinary system, head, neck and extremities. For almost every operation, one or more original procedures are described. The book can hardly be recommended as a textbook for students or as a source of information for surgeons, because the general field of surgery is not covered and because the subject matter is limited to a description of operations with little or no discussion of indications for operation or details of postoperative management. This is a worthy memorial volume to one of the leading exponents of modern surgical technic in France. Delagenière, educated in Paris, began his professional career in Mons, where he developed one of the leading surgical clinics in France. His major contribution to surgery was made during the World War, when he demonstrated the value of osteoperiosteal bone grafts.

The State and Higher Education: Phases of Their Relationship. By Fred J. Kelly, Chief, and John H. McNeely, Research Assistant, the Division of Colleges and Professional Schools, the U. S. Office of Education. With an introduction by Howard J. Savage, Secretary, the Carnegie Foundation for the Advancement of Teaching. The Carnegie Foundation for the Advancement of Teaching in Cooperation with the U. S. Office of Education, Department of the Interior. Paper. Pp. 282, with illustrations. New York: Carnegie Foundation for the Advancement of Teaching, 1933.

Among the problems that the current financial stringency has brought home to American higher education, none are more pressing than those underlying a clear understanding of the field of service that may appropriately be maintained by the individual college or university. In recent years the growth of student enrolments and the comparative ease with which funds could be secured have led institutions to increase their offerings without due regard to the possibility that at some time they might find themselves unable to maintain so expanded a service. The question whether expansion at one institution would result in unwarrantably duplicating the work of others appears to have been seldom if ever considered. The present economic situation has checked this movement sharply. Universities and colleges in increasing numbers are now asking just how they severally may best fit themselves into an adequate but economical system of higher education to serve a state, a region, and the nation.

Part I of this study describes the status of higher education in ten selected states as disclosed by the number, types and locations of institutions, methods of their control, and their curricular offerings. Selection of the particular states has been made with a view to exemplifying the variety of practices in vogue rather than on a basis of population, size or geographic

location. In describing the method of control, the authors treat public and private institutions separately. There is no attempt to appraise conditions found; the facts are allowed to speak for themselves.

The "Trend Toward Unified Control" is the title of the second study in this volume. In most of the states a multiplicity of institutions of higher learning have arisen, largely in response to local demands, and without any coordinating influence or central control. Since all of them, however, looked to their respective legislatures for support, the time was bound to come when their expanding and uncorrelated programs would be called in question. In recent years there has been a well marked trend toward the creation of a single body in each state to direct and control all of the tax supported colleges. A brief account is given of the process by which in thirteen states a central governing board has replaced the numerous independent bodies which formerly exercised the state's authority in the field of higher education.

While the several states naturally vary in their methods and policies, the general expectation is that educational opportunities for the youth of the United States should be essentially uniform. Some of the underlying factors affecting such opportunity are presented in part III. For each state are shown in tabular form the population, resources, student enrolment and revenues of public and private institutions. Also given are certain derived data, such as the estimated wealth per inhabitant from 18 to 21 years inclusive, and receipts for current expenses of public and private institutions calculated in terms of the population of 21 years and over.

From this wealth of statistical data, members of legislatures and other state officials may derive, not much comfort perhaps, but abundance of food for reflection.

La gastrophotographie. Par Pierre Bernay. Préface du Docteur Ch. Garin, professeur agrégé à la Faculté médecin de l'Hôtel-Dieu de Lyon. Paper. Price, 50 francs. Pp. 116, with 94 illustrations. Paris: Masson & Cie, 1931.

The first part of the volume deals with the development of the technic of gastrography by Porges and Heilpern, the special technic employed in the present investigation, precautions to be observed, and untoward reactions in the patients. Then follows a description of the appearance of the different regions of the normal stomach accessible to photography, amply illustrated. The remainder deals with the photographic appearance of the gastric mucosa in ulcerative gastritis, gastric cancer, gastritis, pernicious anemia, benign gastric tumors, gastric resections and gastro-enterostomy, all well illustrated with photographs arranged for stereoscopic vision. All photographs are attached to the pages so that they can easily be detached and placed in the stereoscope. The material is clearly presented. The monograph is modest in its claims for gastrophotography, both as to diagnosis and as to research.

Hydrotherapy in Hospitals for Mental Diseases. By Rebekah Wright, M.D., Hydrotherapeutist, Massachusetts Department of Mental Diseases. Cloth. Price, $3. Pp. 396, with 92 illustrations. Boston: Tudor Press, Inc., 1932.

A book dealing exclusively with hydrotherapy has not been published for some years. In no other field of medicine is hydrotherapy so important as in mental diseases. Therefore there is an important place for such a book as this, and this book admirably fills this need. The book is divided into four parts. The first part considers in detail the technic of the hydriatic procedures that have proved practicable in hospitals for mental diseases. The directions are clear and concise and the illustrations are excellent. The second part is a short discussion of the training and duties of a hydrotherapist, the care of a hospital department, and the records and reports that a hydrotherapist should keep. The third part is for the physician who prescribes hydrotherapy for mental diseases. It considers the scientific basis of hydrotherapy, the effects of the various hydriatic applications, and the indications for hydrotherapy in mental diseases. The fourth part is for the superintendents of hospitals and sanatoriums for mental diseases and gives illustrations of equipment, floor plans and chapters on the construction and equipment of various hydrotherapy departments. It is a book that should be read by physicians interested in the treatment of mental diseases, studied by hydrotherapists in hospitals for mental diseases, and used for reference by superintendents of such hospitals.

Lehrbuch der Histologie und Histogenese. Von Dr. univ. med. Josef Schaffer, o. ö. Professor der Histologie an der Universität in Wien. Third edition. Cloth. Price, 20 marks. Pp. 576, with 640 illustrations. Leipzig: Wilhelm Engelmann, 1933.

A thorough presentation of subject is not often attempted in a textbook—in fact, few authors of such works know enough to do so. In this revision of his standard textbook Schaffer gives one of the few complete expositions of histogenesis and histology in the narrower sense. Unlike Maximow, he has restricted his field largely to structures that the medical student can be expected to see with the optical equipment at his disposal. There is, however, good evidence that cytologically distinct cells have different functions and that emphasis on the internal anatomy of cells is important for the development of histophysiology and pathology. The section on the organs of internal secretion, which has been largely rewritten for this edition, suffers especially from the failure to describe cell types. Aside from this, only minor criticisms can justly be made. The elimination of some sections of the second edition has made possible eighty new illustrations and numerous additions to the text, practically without increasing the size of the volume. Only a master could have written the concise and comprehensive historical introduction; its expansion is a welcome feature and should impress even a tyro. The space devoted to bone and teeth is still out of proportion to the rest, but this is perhaps justified by the author's extensive researches in the field. The clear general discussion of nervous tissues roused the hope that the new section on neuroglia might bring some order into the chaos; but this is expecting too much in the present state of our knowledge. The description of the vascular system does justice to a usually neglected field. Other valuable chapters are those on the skin, the digestive system, the placenta and the eye. The emphasis on the study of maceration preparations is also to be commended. The schemata and general theory of Schroeder have been introduced into the chapter on the female reproductive system, but various old inaccuracies still remain. The addition of a selected bibliography will be welcomed by teachers and is evidence of increasing interest in original sources among elementary students. The paper and illustrations are better than in the previous edition and the price is low for a work of such general excellence—a welcome feature in a German publication at the present time.

Gonorrhea in the Male and Female: A Book for Practitioners. By P. S. Pelouze, M.D., Associate in Urology and Assistant Genito-Urinary Surgeon of the University of Pennsylvania. Second edition. Cloth. Price, $5.50. Pp. 440, with 92 illustrations. Philadelphia: W. B. Saunders Company, 1931.

The first edition of this work appeared under the title of "Gonococcal Urethritis in the Male" and confined its scope to this restricted phase of the subject. As many cases of gonorrheal infection in the male develop manifestations apart from the urethral inflammation, the omission of a discussion of the complications and remote manifestations of the disease was a serious drawback. However, the present volume covers in an able manner, in excellent arrangement, the subject of gonorrhea; and while one may not agree with certain of the deductions of the author noted throughout the volume, his insistence on the "utmost gentleness in the treatment of gonorrhea" is most heartily concurred in. The author gives the results of careful observation and extensive experience with a disease which up to the present time has generally been poorly treated. The recommendations for treatment in the various phases of the infection, both in the male and in the female, leave little to be desired, at the present state of knowledge.

Chemical Wave Transmission in Nerve. By A. V. Hill, F.R.S., Fouderton Research Professor of the Royal Society. Based on the Liversidge Lecture delivered at Cambridge on 13 May 1932. Cloth, $1.25. Pp. 74, with 13 illustrations. New York: Macmillan Company; Cambridge, Eng.: University Press, 1932.

Dr. Hill provides a brief but clear, readable and authentic summary of what is now known concerning chemical and physical changes in nervous tissues induced by activity in the nerve cells and their processes. The monograph, being a lecture before British chemists, is primarily directed to laymen in biology, including chemists; but so many new and important facts in the field of nervous physiology have been established in the last few years that most physicians who graduated more than ten years ago can read it with profit.

Medicolegal

Malpractice: Failure to Use X-Rays.—The defendant treated the patient's arm, Dec. 3, 1930. He found a dislocated wrist and a lacerated wound on the back of the hand. The wound was treated, antitetanus serum administered, the dislocation reduced, and the arm put into an aluminum splint. The splint fitted the lower part of the hand and forearm only. On the following day a roentgenogram was made, but it was not made for the purpose of detecting a fracture and it did not disclose a then existing fracture of the radius. Two days after the accident, the defendant-physician assured his patient that no bones were broken, although, according to the patient's statement, the patient called his attention to a "scraping of the bones." The patient continued to have trouble with his arm, and on January 27 he returned to the defendant for further treatment. A roentgenogram then made showed a fracture of the radius, badly united. Two operations followed, but they left the radius so crooked as to make permanent the dislocation at the wrist and impairment of the arm. The patient brought suit, the trial judge directed a verdict for the defendant-physician, and the patient appealed to the Supreme Court of Wisconsin.

Expert testimony showed that the x-rays were customarily used by physicians in the vicinity where this case was treated, to diagnose fractures and to keep a check on the progress of the healing. The defendant-physician had x-ray apparatus and a fluoroscope in his office. The court concluded that under such circumstances the jury was entitled to believe that a proper discharge of the defendant's obligation required a more frequent and timely use of the x-rays than was made. Evidence was offered to show, too, that in treating a fracture of the radius it was customary to immobilize an arm both at the elbow and at the wrist and that the splint used by the defendant in this case was too short to effect such immobilization. There was therefore sufficient evidence, in the opinion of the court, to carry the case to the jury on the question of the defendant's negligent diagnosis and treatment. To prove that the defendant's failure properly to diagnose and treat the fracture had injured his patient, it was shown that the sooner a fracture is discovered and dealt with, the better the result usually obtained; that good results ordinarily follow proper treatment, and that the result in the present case was consistent with negligent diagnosis and treatment. The fact that open reductions of fractures are often necessary, and angulation and bowing of bones may result in the absence of negligence, as shown by the evidence in this case, did not leave the jury to speculate as to the causation of the patient's condition, since a finding can rest on a preponderance of probabilities. The judgment of the trial court was reversed and the cause remanded for a new trial.—*Schwartz v. Zellmer (Wis.), 245 N. W. 585.*

Administration of Drugs by Iowa Osteopaths Unlawful.—A licensed osteopath prescribed for a patient a mixture of sodium bicarbonate, bismuth subcarbonate and magnesium oxide, to be taken internally. The state of Iowa, through its proper officers, contended that this was the practice of medicine and instituted proceedings to enjoin the osteopath from engaging in such practice without a license so to do. The court issued an injunction and the defendant osteopath appealed to the Supreme Court of Iowa.

The osteopathic practice act of Iowa (section 2554, Iowa Code, 1931) provides that a license to practice osteopathy or osteopathy and surgery shall not authorize the licentiate to prescribe or give internal *curative* medicines. This, the defendant contended, authorizes a licensed osteopath to prescribe and give internal medicines that are not curative. The medicines prescribed in this case, she claimed, were prescribed, not to effect a cure, but to relieve distress. She argued that she had a right to prescribe them and should not be enjoined from doing so. The Iowa statutes do not define the words "internal curative medicine." The Supreme Court of Iowa, however, in *State* v. *Gibson*, 199 Iowa 177, 201 N. W. 590, declared that those words are not to be given a technical meaning but are to be construed in their usual and ordinary sense. Under that rule of construction it would seem that the legislature intended by this phrase to embrace more medicines than those technically known as specifics. Moreover, when it is remembered that osteopaths do not deeply study pharmacology or materia medica, it seems hardly possible that the legislature intended to confer on them the right to prescribe or give all internal medicines except specifics. When the defendant used in the treatment of her patient the internal curative medicines that she prescribed, she practiced medicine. If an osteopath practices medicine without a license to do so he is subject to a penalty and in addition may be enjoined from practicing medicine without a license. A license to practice osteopathy is not a license to practice medicine. The license of an osteopath does not authorize him to go beyond the boundaries of his own calling and engage in another for which a different license is required. The injunction restraining the defendant from practicing medicine was affirmed.—*State v. Stoddard (Iowa), 245 N. W. 273.*

Contracts: Limitation of Area of Practice; "Within Radius of Fifteen Miles" Construed.—The defendant, a licensed physician, practiced in the borough of Boswell, Pa. On March 2, 1928, he agreed to sell to the plaintiff, also a licensed physician, his house, office equipment, surgical instruments, and the good will of his practice, and to refrain from practicing "within the radius of fifteen miles from the borough of Boswell," for fifteen years after the date of the agreement. About Oct. 1, 1929, he opened an office in Johnstown, Pa. The distance between the plaintiff's office in Boswell, which he had purchased from the defendant, and the defendant's newly opened office in Johnstown, was 12.2 miles in an air-line. The plaintiff therefore entered suit to restrain the defendant from violating the terms of his contract. The trial court construed the words "within the radius of fifteen miles" to mean within fifteen miles computed, not by air-line, but by the nearest traveled way, and because the distance between the two offices computed in that way was 15.4 miles, the court dismissed the suit. The plaintiff appealed to the Supreme Court of Pennsylvania.

The meaning of the words used to define the area from which the defendant agreed to withdraw from practice, said the Supreme Court, is plain, unambiguous, and definitive. If the defendant intended when he sold his practice in Boswell to describe a district irregular in shape, its boundaries to be dependent on accessibility by public roads, he should have said so. The boundaries of such an area would necessarily have elements of uncertainty, for there might be dispute about which of several public roads was the nearest traveled public way. The court has no power to substitute for the words "a radius of fifteen miles," the words "fifteen miles by the nearest traveled public way or road," for the context of the agreement and the circumstances of the case exclude such substitution.

The case was remitted to the court below, with instructions to restrain the defendant from further violation of his contract. —*Johnson v. McIntyre (Pa.), 163 A. 290.*

Bone Tumor Attributed to Trauma.—On or about Jan. 6, 1931, the plaintiff was loading a gas shovel on to a flat car. A plank that he was using to tighten a cable slipped, and the plank swung around and struck him. He was thrown from the car to the ground, striking his left hip and his abdomen. The defendant's physician, who treated him at the time, found a fracture of some ribs on the right side and injuries to a kidney and the stomach. After a time the plaintiff returned to work. In the latter part of April he had a severe pain in his back and in his left leg. He continued at work until August 27, when the trouble with his back and leg compelled him to desist. Roentgenograms showed a bone tumor, the exact location of which the published record does not disclose. In a suit arising under the workmen's compensation act of Nebraska, the physician who treated the plaintiff testified that the history of bone tumors shows in most cases that they arise from trauma and that it was generally agreed by all bone authorities that such a condition was usually the result of trauma. This opinion was concurred in by the physician by whom the roentgenograms were taken and by another. On behalf of the defendant, testimony was offered to show that trauma does not cause a tumor, although one physician testified that if there were signs of external violence and if the plaintiff had black and blue marks at the time of the injury, he would say that a trauma was the cause of his condition. From an examination of all the evidence, said the Supreme Court of

Nebraska, before which the case had come on appeal, we conclude that there is ample testimony showing that the tumor is a direct result of the injury suffered by the plaintiff.—*Stone v. Thomson Co. (Neb.), 245 N. W. 600.*

"Good Health" Defined.—On March 12, 1928, the plaintiff went to St. Louis, Mich., where he took baths and consulted a physician. He was up and about, going to shows, circuses, etc. The physician who attended him testified that the ailment from which his patient was suffering was temporary, not serious, and that the patient left fully recovered. On March 16, 1928, the defendant delivered to the plaintiff a policy of insurance against sickness, which provided that the insurance was not to be in force unless the policy was delivered while the insured was in good health. On or about May 2, 1928, the plaintiff entered on a protracted period of sickness. This suit was to recover from the insurer the benefits to which the plaintiff claimed he was entitled under his policy by reason of that sickness. The defendant insurer denied liability, on the ground that the plaintiff was not in good health when the policy was delivered. The trial judge instructed the jury that "good health" means that a person "is free from disease that would seriously affect the general soundness of the system, and that he has not been attended by a physician for a serious ailment," and the jury rendered the verdict in favor of the plaintiff. The defendant insurer appealed to the Supreme Court of Michigan. The evidence of the plaintiff himself and of the physician who was attending him when the policy was delivered, that the plaintiff's ailment was temporary and not serious, gives support to the finding of the jury that the plaintiff, despite the ailment, was in good health at the time of delivery. The verdict therefore, said the Supreme Court, must be sustained. That it is against the great weight of the evidence was a question not presented on the appeal.—*Ligrow v. Abraham Lincoln Life Ins. Co. (Mich.), 245 N. W. 498.*

City Liable for Typhoid Fever Contracted Through Public Water Supply.—The city of Helena, Montana, furnishes water to its inhabitants. The plaintiff contracted typhoid fever through water so supplied and sued the city to recover damages. The district court dismissed the action and the plaintiff appealed to the Supreme Court of Montana. The city contended that in furnishing water it acted in its governmental capacity and therefore was not liable and that in any event the laws that created a state board of health and county and city health departments deprived the city of its control of its water supply and relieved the city of responsibility. The city of Helena, in engaging in this type of activity, said the Supreme Court, stands on the same footing as a private individual or a business corporation similarly situated. The activities of the city in supplying water for domestic purposes, for pay, carry with them the duty to exercise care commensurate with the risk involved and to see that the water that it supplies is free from filth and germs that will affect the health of consumers. To allege that health officers have been negligent is no defense to a charge that the city knowingly delivered polluted water. The action of the district court dismissing the case was reversed and the cause remanded for further procedures.—*Campbell v. City of Helena (Mont.), 16 P. (2d) 1.*

Evidence: Bias of Expert Witness May be Shown.—It does not constitute prejudicial error for counsel to bring out on cross-examination the fact that a physician testifying as an expert witness is a regular examiner for the insurance company in whose behalf he is testifying and that he is paid by the insurance company. Such evidence bears on the bias, credibility and interest of the witness. Cross-examination of this character, however, in the opinion of the Supreme Court of Idaho, should be carefully controlled by the trial court.—*Curtis v. Ficken (Idaho), 16 P. (2d) 977.*

Workmen's Compensation Acts: Refusal to Undergo Fourth Major Operation.—Where an employee has undergone three major operations, his refusal to undergo another, the beneficial results of which are in doubt, does not constitute such unreasonableness as to preclude his right to compensation under the workmen's compensation act of Utah.—*Standard Coal Company v. Industrial Commission of Utah (Utah), 16 P. (2d) 926.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.
Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.
Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
Ohio State Medical Association, Akron, September 7-8. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary
Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.
Washington State Medical Association, Seattle, August 28-30. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

SOCIETY FOR THE PREVENTION OF ASPHYXIAL DEATH

New York State Conference on Problems Relating to Death from Asphyxiation, held in New York, May 24, 1933

The President, PALUEL J. FLAGG, M.D., New York, in the Chair

Infant Deaths, with Special Reference to Asphyxia

DR. SHIRLEY W. WYNNE, New York: The infant mortality rate achieved in this city last year was almost down to 50 per thousand births, a rate that would have been thought impossible of attainment a generation ago. However, this low rate represented the death of 5,594 infants, and it is well to inquire whether many of these deaths could not have been prevented. During the past generation most of the reduction in the infant mortality rate has occurred in diseases of the digestive system; also some in the death rate charged to the pneumonias and to the infectious diseases. There has been little change in the rate charged to premature birth, injury at birth and other diseases peculiar to early infancy. Our great problem now in infant mortality is the reduction in neonatal deaths; i. e., the deaths which occur in the first few days of life. Of the infant deaths in New York City from 1929 to 1931, inclusive, nearly 24 per cent occurred in the first day of life; over 38 per cent occurred during the first week, and more than half of all infant deaths occurred in the first month.

It is clear that the activities carried on by the department of health can have little effect on about 40 per cent of the infant deaths, and I do not see how the pediatricians can contribute very much more. The great loss of infant lives occurs before the pediatrician has charge of the infants. The organized medical profession should face the facts brought out in this analysis and take steps to reduce what I consider to be still a considerable proportion of preventable deaths. Could not a considerable proportion of the deaths charged to atelectasis and asphyxia neonatorum be prevented by proper treatment? This, and other questions which a study of the causes of death during and immediately following childbirth would suggest, deserve careful attention The problem of preventing deaths from atelectasis, asphyxia neonatorum and aspiration pneumonia might well be studied by this newly organized society. The department of health welcomes every effort which holds out the promise of reducing our mortality rates.

The Society for the Prevention of Asphyxial Death has suggested that the geographic location of areas in the city with excessive infant mortality rates would be of service, with a possible view of locating a future ambulance service. In Manhattan the "sore spots" for infant mortality are the central Harlem health center district, with a rate of 97 as against 72 for the borough as a whole, the Lower West Side, with a rate of 80, and East Harlem, with 77. However, in some of these districts there are so-called health areas in which the rates are considerably higher. Thus, in central Harlem there are two areas with rates of 121 and 119, respectively. An area on the Lower West Side has a rate of 107 and one in Kips Bay-Lenox Hill a rate of 104. Similar tabulations are available

for the entire city and will gladly be placed at the disposal of the society. It may be that the first efforts to reduce infant deaths caused by asphyxia should begin in these "sore spots."

DISCUSSION

DR. HAVEN EMERSON, New York: Every new movement dealing with the extent and quality of deaths reveals an inadequacy of fundamental information. The very development of this movement calls attention to the fact that two fundamentals are lacking on which social intelligence, *en masse* action or governmental action can be taken. One is the necessity for current reporting of all cases of sickness that come into the hands of institutions or medical agencies, or, it is to be hoped, ultimately into the hands of individual physicians. I should like to use the terms that are proposed by the biologists in discussing cellular survival. Death may be considered an irreversible process. But death by drowning at a certain point is a reversible process. So, in all these categories of deaths, those are being discussed which are reversible by means of technics now available, those which are really postponable, and those which are inevitable. The postponable deaths are those which occur in the course of poliomyelitis. It is not uncommon in an epidemic of poliomyelitis to find a person suffering from respiratory paralysis which is not necessarily of a permanent kind. If these patients are relieved for a period while the congested stages of the lesions in the spinal cord and bulb are recovered from, they may recover and carry on a reasonable normal life afterward. But if the damage is of a structural and permanent kind, affecting the anterior horn cell, a postponement of death may be effected by means of artificial respiration, but no recovery. So the approach to this problem demands that potential deaths be looked at from various points of view. I have fixed in my mind what is certainly a sharp impression in that of almost any young physician: the first instance in which a baby fails to start breathing because of conditions that have preceded in the length of the confinement, and finding oneself with all the usual physiologic resources uneffective simply for the lack of what is now available in artificial external negative pressure applied to the thorax. Dr. Wynne's analysis is clear in defining that fraction of all deaths under 1 year that may conceivably be preventable by appropriate technics at the time of birth or within the first few hours, or even within a day or two of birth. He estimated that there might be 400 lives saved a year in this city from deaths from asphyctic origin occurring in little children. This is twice as many as that now occurring annually from diphtheria, showing the expense quite properly incurred because of the knowledge in the matter of preventing those 200 deaths from diphtheria each year. A little intelligent organization, a knowledge of the resources, will achieve as much quantitatively in the saving of life from this group of deaths as it will in diphtheria. Physicians are sensitized, as it were, to the moral responsibility to remove diphtheria. We sort of feel that the death of an infant from asphyxia is an unavoidable accident, something unpreventable, unforeseeable. We have got to give up that attitude and determine the sources that are now available through the teaching of physiology, through the ingenuity of chemists, physicists, and mechanics, which can be brought to bear at the time and place where these deaths may be expected. There are only two problems of preventive medicine: One is a knowledge of the expected prevalence, the location, the distribution, the time and place and age ocurrence of a disease that we think is preventable. The second one is the specific employment of preventive resources. We are further along in the analysis of the specific means of prevention than we are in a knowledge of the distribution or prevalence of these conditions. The state department of health can require that no laboratory offering diagnostic service should be without certain facilities for diagnostic aids in infectious diseases, that their technics must be of a certain quality, and that they must have personnel of a certain skill. An attempt to translate that theory into the operation of hospitals I believe would do damage at this stage, which is the experimental stage. Physicians do not know just what instruments or skills or materials are going to be always necessary. It is rather for us, through such a society as this, to make it common for institutions to have certain minimum essential conveniences with which to meet what are frequent emergencies. It can be stated that for every 10,000 patients in a year there are going to be a certain number with an asphyctic emergency, and to meet those it would be suggested that this and that kind of equipment be provided. The final stage in any movement such as this is initiating will be expressed when the actuaries, the underwriters, the financially interested concerns attempt to express as a fixed human hazard these forms of accidental death as a basis of insurance. The insurance companies, quite aware of these deaths, have lost the significance of them because the international list of causes of death has been bent on etiologic factors and anatomic types of causes of death rather than having from all different categories a particular form of death assembled under one title. There is no such thing as the vital statistics of asphyxial deaths in the United States now.

Medical Examiners' Findings Relative to Asphyxial Death

DR. HARRISON S. MARTLAND, Newark, N. J.: [This paper consisted largely of references to colored lantern slides.]

DISCUSSION

DR. THOMAS A. GONZALES, New York: In regard to the strangulation cases presented by Dr. Martland, I have found that, in a series of about fifty cases of asphyxia due to ligature, suicidal deaths, in most instances there is little change in the internal tissues of the neck. That is ordinarily described in books as hemorrhage, tears and so forth of the inner number of thoracic arteries and various other ligaments. The striking feature of these cases is the strangulation mark on the skin of the neck. This is probably because in most suicides the body drops a short distance in contradistinction to legal executions, in which the body may drop 6 or 8 feet, with considerable trauma to the neck, even resulting sometimes in a fracture. In some strangulation cases, the marks on the neck are slight or absent, especially when soft material has been used in the strangulation. Among the fatalities in which there is difficulty in making a diagnosis are those due to general and local anesthesia and exposures to noxious gases in certain industries. With the possible exception of chloroform, which usually is easily extracted from the tissues, I have had difficulty in recovering the drug which is used in the anesthesia; in fact, repeated chemical analyses have been futile in this respect, and in all types of anesthesia, local and general. There has been no difficulty in recovering cocaine in suicidal deaths. In anesthesia there is a small quantity used, and in suicides generally large quantities are used. There is another factor perhaps in the cases in which the dosage is small: the drug splits up in the body rather quickly. Other conditions are often looked for to explain these deaths, such as status lymphaticus and, in older people, cardiac lesions and lesions in other organs. The clinical symptoms of these cases are often misleading. A man had an ulcerated bleeding carcinoma of the urinary bladder. Following spinal anesthesia, air was injected into the bladder for the period of the operation, and he died in a few minutes. The case was thought to be an anesthetic death because quite a number of spinal anesthetic deaths occur. The autopsy revealed air in the venous sinus. My opinion was that air entered in the dilated venous sinus in the ulcerated wound. There was frothy blood in the right heart. The blood vessels around the bladder were filled with air. In New York City in a year there are between 300 and 400 cases of accidents by carbon monoxide poisoning, without any relation to suicide. A great majority are from illuminating gas. A small percentage are from coal gas. Another small percentage are from the exhaust gases from combustion engines. In some carbon monoxide poisonings, the late effects are extremely interesting. Exposure to a massive dose or exposure to a repeated small dose may produce symptoms that are very important. These persons have headaches, a sense of constriction about the head, vertigo, dizziness, tremors and apathy, and they are stuporous at times. In the massive exposures there often occur cases ending in death; but when these patients come out of the carbon monoxide they have tremor and a mask-like face closely resembling the face of Parkinson's disease. Most of the accidental gas cases can be prevented. Most of them are due to carelessness. An educational program like the one the Society for the Prevention of Asphyxial Death is trying to put forward is of great importance. The

society should also back legislation to prevent the use of defective fixtures, which are the responsibility of the owner of the house and not of the gas company. I have seen many instances in which carbon monoxide poisoning could have been prevented if the fixtures had been taken care of.

The Economic Aspect of Asphyxial Death

ALBERT W. WHITNEY, New York: I understand death from asphyxiation to mean any death from any cause whatsoever in which life might possibly have been saved if artificial respiration could have been induced; in other words, cases in which the proximate cause of death is inability to breath.

A distinction will have to be drawn between cases in which prevention of death is theoretically possible and cases in which it is practically possible. All deaths by drowning are evidently due to asphyxiation, the word being used in this sense, but there are only a part of such deaths in which aid can be got to the drowning person; in a large number of cases the body is not even recovered. Evidently the most valuable statistical study will be one that undertakes to present the number of cases of asphyxiation in which it would have been physically possible to furnish aid that might have saved the life. It is very difficult to get statistical data bearing on this subject. Dr. Murphy, chief statistician for vital statistics of the Bureau of the Census, has been kind enough to furnish me what statistics he has, but this material deals only with the first part of the subject and is even then inadequate. One readily realizes what a difficult thing it is. One encounters all kinds of points of view. One point of view of the value of the human life might be the wealth produced, divided by the lives, or something like that. But the point is that it is a decidedly moot question and can be looked at from many points of view. One extreme point of view would be what the insurance company has to pay in a damage suit. That, of course, is based on what a jury thinks a life is worth.

There is no way to deal with the second part of the problem except by the use of judgment. Dr. Flagg's estimates for the city of New York are as follows: general asphyxia, 934; stillbirth, 946; atelectasis, 336; pulmonary complication, 158; premature birth, 426; total, 2,800. Taking the population of New York City to be 7,000,000 and the population of the United States to be 126,000,000, that would mean that these figures would have to be multiplied by 18 to get the approximate figure; that is, 50,400 for the United States as a whole. These figures for stillbirths, atelectasis and premature birth seem to me high. I have no figures for pulmonary complication.

The economic value of a human life is a moot question. The book by Dublin and Lotka entitled "The Money Value of a Man" gives the present worth (at a discount rate of 4.5 per cent per annum) of net future earnings (that is, earnings less living expenses) for an income class of $1,000 a year at $750 for age 0 and $9,400 for age 30. Dublin and Lotka actuarially compute the value of the future earnings of a new-born baby at $1,000 a year. This of course includes the probability of death at these various ages. If one computes that on an actuarial basis and takes out of that each year the living expenses, one finds on that basis, at a discount rate of 4.5 per cent, assuming ordinary mortality, that the value of a baby's life is $750. In other words, the probable value of the difference between the earnings and the living expense for a baby that was just born would be $750. For a man aged 30, it would be $9,400. I am not saying that this is the proper figure. Of course many of the people that are drowned are not wage earners. It is assumed that these figures are applicable to the present case, the economic value of these 50,400 lives will be $207,824,400.

DISCUSSION

LEON SENIOR, New York: Since Mr. Whitney's speculations on the economic value of human life are nothing more than speculations, I shall not take issue with him. I will confine myself to a subject with which I am familiar, workmen's compensation insurance. Institutions that insure the obligations of the employer for loss due to work accidents are interested in methods of prevention and in the restoration of the worker to life and health. Education is the foremost method in accident prevention. Insurance carriers hold to the doctrine that all accidents are preventable through education and proper supervision. The state labor department is one of the agencies for establishing rules as a basis for education. In dealing with the subject of accidents due to asphyxiation, the Industrial Code provides the following rule:

> Rule 741. All dust, fumes, vapors, gases, fibers, fogs, mists, or other atmospheric impurities that are emitted or created in quantities tending to injure the health of employees in or in connection with any process of manufacture which involves the formation or use of substances . . . that can be detected by a recognized standard method of chemical analysis shall be removed by means of suction devices as far as practicable at their point of origin.

Carbon monoxide, chlorine and cyanogen compounds are among the harmful substances which produce injuries unless proper precautions are taken against asphyxiation. Rule 724 of the industrial code provides that

> Every workroom in which carbon monoxide is emitted or created in or in connection with any process of manufacture shall be provided with such ventilation that the carbon monoxide shall not exceed two parts in ten thousand volumes of air in any occupied part of such workroom.

For the calendar year 1931 the New York Labor Department showed 122 cases of compensated accidents due to gases. These 122 cases resulted in 28 deaths and 94 temporary disabilities, costing the insurance carriers and consequently the employers $184,000. Carbon monoxide and dioxide was the cause of 51 cases, of which 3 were deaths; illuminating gas caused 32 accidents; hydrocyanic acid resulted in 4 cases, of which 1 was fatal. Electrical shock, if classed as causing asphyxial death, shows 647 cases in one year, of which 60 were death and permanent disability, and 530 temporary disability, with a total cost of $555,853. Gas explosions produced 131 cases, of which 5 were deaths and 108 temporary disability at a cost of $56,255. In the mines, black damp is formed by the combustion of nitrogen and carbon dioxide. Fire damp is formed by an explosive gas called methane. Acetylene mixed with air becomes an asphyxial hazard dangerous to industry. Blast furnace gas contains from 24 to 30 per cent of carbon dioxide. The extraction of gold from ore requires the use of chemical salts which, when in contact with air, form the deadly asphyxiant hydrocyanic acid.

I have encountered numerous cases of preventable losses due to asphyxia. About four years ago two men were killed in a plant located at Corlears and Water streets, New York. All employees had been warned to vacate the plant on Saturday afternoon, at which time it was to be fumigated by the releasing of cyanogen gas on the premises. Two of the workmen either neglected to comply or forgot the warning and went to the basement to sleep. Both were found dead on the following Monday after the factory had been cleared of gas. A thorough inspection of the premises might have saved the lives of these two men. In another plant in New York, an employee last winter, while admitting chlorine gas into a tumbler of starch in order to bleach it, loosened the coupling that closed the chlorine gas container. He was overcome, was rushed to a hospital, and died of asphyxiation. The accident might have been prevented if the employee had been thoroughly educated in the danger of his occupation. The newspapers, May 22, carried the news of a catastrophe in Newark, N. J., in which five men lost their lives in a gas pit of the tannery. A review of the case leaves one astonished at the contempt for the danger shown by the workmen and the firemen who attempted rescue efforts.

Prevention measures lie partly in the field of safety engineering and partly in the field of medicine. Industrial safety engineers have given much time to the study of accident prevention and to educational work. The time has come for the medical profession to undertake the second part of the problem; namely, the study of methods for restoring the injured after the occurrence of the accident. There is an economic aspect of huge importance to saving lives of men in industry, most of whom have dependents who have no other resources than the wage earned by the workman. Workmen's compensation is but a poor substitute for that wage, and yet workmen's compensation in this country represents a cost of at least $150,000,000 per annum. This cost paid for insuring compensation benefits under the laws of our several states is the economic contribution, the economic loss, if you please, paid by society for work accidents, many of which are preventable. This economic loss takes no account of the physical and mental suffering, of broken homes, of injured workmen, of widowed mothers and orphaned children. Society has become, so to speak, acclimated to these results of industry using deadly

implements to accomplish its purpose to the point at which most persons accept the situation as beyond repair. It is the duty of technicians in public economy and in safety engineering and of physicians to arouse the public conscience, to dramatize the facts, and to encourage the men and the organizations that seek by research and study to reduce the social and economic loss resulting from the use of dangerous implements or substances in industry.

Modern Methods of Resuscitation in New York City

DR. DANIEL J. DONOVAN, New York: The police department of New York City, in discharging its primary function of safeguarding life, is constantly confronted by the three great emergencies of death by drowning, by gas poisoning and by electrical shock. The city of New York, with its heterogeneous mass, comprising twenty or thirty nationalities, is recognized as the largest asphyxiation ground in the world. Here it is that derelicts on the sea of life come from the four corners of the earth in a last desperate attempt to repair the ravages of fate and, failing, seek a painless path to eternity by means of gas poisoning or drowning. Here it is that from among the thousands who go in bathing during the torrid months of the year, many are rescued from the water only to die on beaches, docks and waterfronts because of the widespread lack of knowledge of how to apply artificial respiration. Deaths occasioned by drowning, gas poisoning and electrical shock approximate 12,000 in the United States annually. It is estimated that between 40,000 and 50,000 cases are successfully treated by the application of artificial respiration measures. When an unfortunate is rescued from the river or surf or is found inert in a gas-filled room or has been apparently shocked to death by contact with a live wire, the fact that he has ceased to breathe is not in itself an indication that death has taken place. There are records of submersion from eighteen to twenty minutes, after which the victims went on to complete recovery. However, it is probable that after from twelve to fifteen minutes' submersion recovery will be very unlikely. We all know we can hold our breath and the heart continues to beat. A very determined individual could probably hold his breath until he lost consciousness, but then he would breathe again and would soon be as well as ever.

If a person is submerged in water or if anything stops breathing, how long will the heart continue to beat? That is the time in which to start artificial respiration if recovery is to be effected The nearer to the moment that breathing has ceased artificial breathing is instituted, the greater are the chances of success. If one is to treat successfully a person critically overcome by submersion, by gas poisoning or by electrical shock, one does so by substituting an artificial method of breathing for the natural one.

About fourteen years ago I became interested in the subject of artificial respiration. The problem, as I saw it, was how to equip as great a portion of the general public as possible with the knowledge necessary to act effectively when confronted with the emergencies of drowning, gas poisoning and electrical shock. It appeared to me that the teaching of artificial respiration should be made an integral part of the training of future police officers in the recruits' training school, as, aside from the direct effect of making these officers potential salvagers of human life, their demonstrations of the efficacy of artificial respiration when confronted with impending tragedy in the field of their daily duties would serve as a means of arousing the citywide interest of the public. About ten years ago I caused to be inserted in the curriculum a course of training in the Schäfer prone pressure method of artificial respiration. During their three months at the recruits' training school, every future police officer of New York City is thoroughly taught to apply this treatment.

In cases of gas poisoning, artificial respiration is supplemented by the use of a special apparatus known as the inhalator. The use of this apparatus does not supplant the application of artificial respiration but is used in conjunction with it. Carbon monoxide kills by altering the blood so that oxygen cannot be gathered by the blood in the lungs and carried throughout the body. When the blood has gathered carbon monoxide, it will lose it if the patient is placed in fresh air and breathes fairly well. It has been found that carbon monoxide will leave the body more rapidly if pure oxygen is breathed instead of air, which is only one-fifth oxygen. Accordingly, gas victims are given oxygen by means of the special apparatus known as the inhalator, which consists of tanks containing 93 per cent oxygen and 7 per cent carbon dioxide. The latter stimulates breathing considerably and causes a patient to take larger breaths and more of them. The increased vigor of breathing brings in more oxygen and replaces the carbon monoxide with greater rapidity.

In 1925 the police department inaugurated its present emergency truck system, enabling me to put the inhalator to practical use. Police emergency trucks are high powered motor cars, built on the order of fire patrol trucks. A crew of twenty-one men is assigned to each, divided into three squads, and are on duty twenty-four hours daily in eight hour shifts. They are used only in emergencies, such as explosions, railroad disasters, fires and occurrences of lesser magnitude, such as a gas poisoning case in which emergency treatment is essential. At present there are twenty police emergency trucks on constant duty. Each truck is equipped with an inhalator and every member of the crews is adept in the use of the inhalator and the application of the Schäfer prone pressure method of artificial respiration. The records on file in the chief surgeon's office at police headquarters bear eloquent testimony to the efficacy of artificial respiration in cases of drowning, gas poisoning and electrical shock, and the supplementary use of the inhalator in gas poisoning emergencies.

Fundamentals of Peroral Endoscopy (Laryngoscopy)

DR. CHEVALIER JACKSON, Philadelphia: The easiest way to present the fundamentals will be by means of lantern slides. Twenty years ago, Yandell Henderson had not said in making his discoveries that carbon dioxide must be given in conjunction with oxygen. It was thought that the carbon dioxide was acting somewhat in the manner in which carbon monoxide is now known to act. Carbon dioxide was thought to be toxic. Twenty years ago the oxygen tank was without any carbon dioxide because nothing was known about that. An oxygen tank is connected up by means of a pipe, the bronchoscope insufflating oxygen directly into the lung. Before insufflation, the secretion is taken out by negative pressure, by aspiration. Bronchoscopy for asphyxia is not done outside the bronchoscopic clinic. My associates and I never do a bronchoscopy without having the oxygen tank beside the table, because asphyxia is one of the emergencies we must always be prepared to encounter. We encounter asphyxia 500 times to the once that we have any trouble with the artery circulation. When we have a patient with normal asphyxia, in order to get a straightened rigid tube around all the corners, running around the corners back of the tongue and then into the larynx, we have four different angles to turn. In order that the straightened rigid tube, the bronchoscope, may be introduced, the patient must be in a certain position. His head must be elevated so as to bring the trachea in line with the operator's eye, provided the patient is not asphyxiated. When a patient is asphyxiated, he is as limp as a rag. With an instrument one can look directly down into the trachea without any resistance on the part of the patient, because he is completely relaxed. One thing about asphyxia is complete and absolute relaxation after respiration has stopped. We are careful to lift the patient's upper lip to put it out of the way. The directoscope is put in, and by a lifting motion the curves are obliterated. The cross-section of the head of a man who was asphyxiated with suicidal intent shows the crowding back of the tissues. In a patient asphyxiated from suicidal intent, everything is crowded back against the back wall and the larynx is completely obliterated.

Supposing that man is cut down before his heart has stopped. We put in a laryngoscope, lift up on it, pull away, pull all of these tissues that have been crowded back by the rope; we lift those away to clear that area. In nearly all anesthesias there is a dropping back of the tongue and all the tissues. It is to clear this airway that Dr. Flagg devised a laryngoscope available for general use for the prevention of asphyxia. It has prevented thousands from passing away under anesthesia by clearing the airway. This instrument is not used to pry on the upper teeth. It is a lifting motion. The whole head is lifted off the table in order to clear this area. The operator can look straight into the windpipe, put in an aspirating tube

and clear out the obstructing mucus. He is then ready for the insufflation of the oxygen with its 5 to 10 per cent of carbon dioxide.

There is no use trying to force in oxygen and carbon dioxide when the larynx is plugged up. This drives the plug in tighter. The only way one can determine whether or not there is any obstruction is to look and see. One looks in the mouth but can't see down to the larynx unless the tongue is displaced with the direct laryngoscope.

A bronchoscopic operating room is prepared to deal with obstructions in the air and food passages and to deal with every emergency and every problem that can arise. It is adapted for the relief of asphyxia in patients who can be brought in. Practically none of the patients whose deaths Dr. Donovan cited could be taken to a bronchoscopic clinic in time to save their lives. To save those lives, something a great deal better mobilized than a bronchoscopic clinic must be available. There must be some sort of ambulance service that can get promptly to the patient and that can be equipped not only with the small instrumentarium required, but with men trained in its use. That is an absolute necessity.

A patient who is asphyxiating from any obstruction above the level of the clavicles gives unmistakable signs of what is the matter with him. At every inspiration his chest sinks in. There is a sinking in at the suprasternal notch. On expiration those depressions fill out. The patient takes another inspiration and again this sinking in occurs. The patient is becoming asphyxiated from an obstructive larynx dyspnea. It does not occur in asthma, in cardiac dyspnea, in any form of dyspnea but the obstructive larynx dyspnea, which is the most common of all forms of surgical dyspnea. I am not speaking now of gas accidents in asphyxia or of the industrial accidents.

Here is the other symptom: He is restless. He is working so hard to pump in air that he doesn't want to be bothered. He doesn't want to take food. He just wants to be let alone. He is putting in all his time to pull in air, because there is a sinking of the suprasternal notch. That is a typical picture of asphyxia from an obstructive larynx dyspnea. After the breathing is stopped, one will have to get it started again.

DISCUSSION

DR. CHARLES J. IMPERATORI, New York: I agree with the method that Professor Jackson has presented. This method of Dr. Flagg's represents an emergency station in contradistinction to bronchoscopic clinics that are the repair shops. With regard to trauma and other objections that have been raised to this method, I can positively say that there are no traumas that will ensue provided the individual doing the laryngoscopy and the intubation has been given sufficient instruction and has sufficient intelligence. Any method, no matter how simple, can be made, one might say, a destructive method if the individual using it does not use his intelligence. The objections that have been raised at times that the intubation of the larynx will produce a paralysis of the cords and a stretching of the cords so that it will interfere with the voice eventually, and so on, are not to be considered, since this is a life-saving procedure. What is done by this method of Dr. Flagg's is, as it were, to extend the trachea and bronchi out beyond the mouth and beyond this danger zone, which has been described by Professor Jackson. And then, by the insufflation or the introduction of oxygen, the needed air or needed oxygen is supplied to the individual, plus this method of gas therapy. Gas therapy is not a new thing. It has been used for a long time. But with this method of Dr. Flagg's he has made it easy for those who are not continuously doing these bronchoscopic procedures. Formerly oxygen was used simply in the way of a mask or a tube and the patient's mouth and face were sprayed with the oxygen. But if the tongue had dropped back into the mouth and there was a great deal of secretion, even though the tongue was not pulled forward, frequently there would not be enough pressure to get the oxygen down into the trachea. These instruments that have been devised by Dr. Flagg are of great importance. There are certain things that must not be forgotten. There is still the operation of tracheotomy, which may be necessary following this procedure. I know it is not Dr. Flagg's idea that this is to supplant tracheotomies when they are necessary. This is entirely an emergency measure.

Fundamentals of Asphyxia

YANDELL HENDERSON, PH.D., New Haven, Conn.: This article appears in full in this issue of THE JOURNAL, page 261.

DISCUSSION

DAYTON J. EDWARDS, PH.D., New York: The primary disturbance in asphyxia is a reduction in the quantity of oxygen supplied to the tissue cells. Although oxygen is indispensable to the life of the cells, an excess of this substance has a toxic action. This presents, therefore, one of the most important problems in physiology, namely, the nature of the mechanism of the control of respiration, and the best means of supporting the respiratory process when a condition of failure seems imminent. It is recognized that carbon dioxide plays an indispensable part in the control of respiration. Much credit is due Dr. Henderson for focusing attention on this discovery and for reiterating with emphasis its practical significance. Experimental workers, while fully aware of the fact of diminished carbon dioxide during the early stages of anesthesia, have been slow to adopt corrective measures. At present the disastrous results of a moderate degree of asphyxia, plus the excessive decrease in the carbon dioxide of the blood, is a familiar sight in student laboratory work. The combination of partial anesthesia, a beginning asphyxia, and a reduction in blood carbon dioxide by hyperventilation is peculiarly lethal in effect. It is not surprising that difficulties have been encountered in establishing in clinical practice the principles of the use of carbon dioxide. The encouraging results reported are a tribute to those whose teachings have been carried on for years in the face of difficulties.

That the administration of carbon dioxide serves in some way to excite the respiratory center and thereby greatly increase the volume of air exchange in the lungs per minute is an easily demonstrated fact. But unless it can be definitely shown that continued carbon dioxide stimulation tends to establish favorable physiologic conditions in the organism, this procedure would seem to be of limited service. Dr. Henderson does not specifically state that an increased oxygen utilization occurs under carbon dioxide stimulation, but one is led to infer that this must result from the favorable oxygen-carbon dioxide relationship which he postulates.

In the use of carbon dioxide in asphyxia the conclusions to be drawn are (1) that it excites the respiratory center at a time when such a measure is desirable and (2) that it acts as a therapeutic agent to establish favorable physiologic relations. The grounds for the first claim seem quite easy to understand, particularly as applied to carbon monoxide poisoning and the postanesthetic period, since it is known that the ventilation of the lungs becomes increased through its action, and this brings into play essential factors to displace the monoxide combination of hemoglobin with the useful oxyhemoglobin. The other question, namely, the therapeutic effects of increased carbon dioxide, is more difficult to rationalize. Dr. Henderson stresses the rôle of carbon dioxide in restoring a favorable bicarbonate relation in the blood with an accompanying recovery of the normal irritability of the respiratory center. It is not easy to follow all the reasons for the bicarbonate shift, and questions will doubtless arise concerning this. Moreover, if the administration of carbon dioxide is not indicated in all cases of asphyxia, is it possible to set down quite precisely its indications? A question arises also whether there may not be overdosage effects. One group of observers state that breathing a 7.5 per cent mixture of carbon dioxide for twenty minutes produces a shock from which the system does not wholly escape for some hours. May not cardiac and vascular factors play essential rôles? Indeed, there is evidence that carbon dioxide exerts a definite effect on cardiodynamics, and recent experiments indicate that it produces changes in the caliber of the cerebral vessels which may have a bearing on other observations that the volume flow of blood through the respiratory center plays an important part in its regulation.

One need not be greatly concerned with one theory or another as to how carbon dioxide acts, since any theory one wishes to adopt will not alter the facts. The real answer is given by the results obtained in the use of carbon dioxide under carefully controlled conditions. The evidence is favorable.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

25: 317-464 (March) 1933

Lesions of Placental Vessels: Their Relationship to Pathology of Placenta; Their Effect on Fetal Morbidity and Mortality. T. L. Montgomery, Philadelphia.—p. 320.
Clinical Study of One Hundred Cases of Developmental and Functional Deficiencies in the Female with Analysis of Treatment and Results. W. H. Cary, New York.—p. 335.
Ovarian Struma: Morphologic, Pharmacologic and Biologic Examination. A. Plaut, New York.—p. 351.
*Use of Folliculin in Involutional States. E. L. Sevringhaus, Madison, Wis.—p. 361.
Radiation Therapy in Gynecologic Malignancy. I. I. Kaplan, New York.—p. 368.
*Information Regarding Gonorrhea in Immature Female. G. C. Schauffler and C. Kuhn, Portland, Ore.—p. 374.
Spontaneous Evolution of the Fetus in Transverse Presentation. N. J. Eastman, Baltimore.—p. 382.
Postmenopausal Bleeding. S. H. Geist and M. Matus, New York.—p. 388.
*Clinical Pathologic Study of Three Hundred and Three Consecutive Abdominal Hysterectomies. A. Samuels and E. S. Edlavitch, Baltimore.—p. 397.
Do Sperm Morphology and Biometrics Really Offer a Reliable Index of Fertility? G. L. Moench, New York.—p. 410.
Vesico-Ureteral Reflux as Etiologic Factor in Pyelitis of Pregnancy. H. L. Morris and J. F. Brunton, Detroit.—p. 414.
Account of a Year's Service in Obstetrics at Morrisania Hospital: Public Institution. H. Aranow, New York.—p. 420.
Survey of Cesarean Sections Performed in Philadelphia During 1931. C. B. Lull, Philadelphia.—p. 426.
Cystic Fibroid Weighing Forty-Seven Pounds and Simulating an Ovarian Cyst. J. P. Greenhill, Chicago.—p. 440.
Submucous Myoma Complicating the Puerperium: Review of Literature with Report of Case. B. Mann and Henrietta Lowenburg, Philadelphia.—p. 443.
Tumors of Round Ligament. C. F. Horine, Baltimore.—p. 446.
Ectopia Cordis: Case. C. Lintgen, Philadelphia.—p. 449.
Instrument Facilitating Atraumatic Palpebral Separation in the New-Born. M. A. Castallo, Providence, R. I.—p. 451.

Folliculin in Involutional States.—Sevringhaus presents the results he obtained in a series of thirty-two women, who presented psychic and nervous phenomena that are commonly associated with the involutional state, and whom he treated with folliculin. Hot flashes occurred in all the patients of the series, paresthesias in sixteen, insomnia in nineteen and psychotic pictures in seventeen. Obesity was observed in only thirteen, and hypertension in ten. Of this series six had artificial climacteric produced by irradiation or surgery, and there were three patients with a spontaneous premature menopausal picture, possibly to be considered as ovarian insufficiency. The author found the use of simple psychotherapeutic procedures and small doses of folliculin daily or oftener helpful in the psychotic cases as well as in the simpler vasomotor types and the pseudothyrotoxic types previously reported. The refractory nature of the artificial menopause leads to a discussion of the possible relationships of the pituitary and the ovaries at the age of the climacteric. Overdosage has caused the reappearance of menses in one truly menopausal woman, has provoked menorrhagia and increased dysmenorrhea in an early menopausal patient, and a single dose of 50 units has produced in still another woman a violent and persistent hot flash with great discomfort; therefore the author's dose in the present series was from 10 to 25 units at one time, given once or twice daily.

Gonorrhea in Immature Women.—Schauffler and Kuhn state that douches, instillations and injections have been used empirically and ineffectually for too many years in the treatment of vaginal gonorrhea in the immature. They believe that the most effective approach is through the use of a relatively firm ointment base, injected by a technic that insures the production of sufficient intravaginal pressure to cause invasion of the ointment into every crypt and corner. They recommend the use of plain anhydrous wool fat, incorporating an appropriate concentration of any worthwhile antiseptic. They use 1 per cent silver nitrate. The ointment should not be warm, as its quality of firmness facilitates distention of the vagina with the use of mild intravaginal pressure. Also, it is more easily and completely retained if cold and has the highest possible fluid affinity, which makes it a highly effective vehicle for carrying the antiseptic into the moist vaginal wall—in contrast to the usual petrolatum base, which is repulsed by moisture. Their clinical studies have been supplemented by the injection of postmortem specimens by this technic. By this method they have obtained a consistent, complete and satisfactory application of the medicament, which remains in the vagina over periods varying up to forty-eight hours. The use of this method in more than 2,000 treatments has in no instance resulted in any untoward incident.

Study of Abdominal Hysterectomies.—Samuels and Edlavitch report a series of 303 consecutive abdominal hysterectomies performed for a variety of pathologic conditions in which there was a mortality of 2.6 per cent. Approximately 85 per cent of the uteri were removed for myomas, chronic pelvic inflammation and malignant conditions, and the important symptoms necessitating surgical aid were pain, bleeding and tumor. There were eight instances of cancer of the fundus of the uterus and cancer of the cervix, four of each. Statistical reviews of major surgical operations at periodic intervals will reveal many interesting facts and tend to increase the efficiency of the surgical departments of hospitals.

American Journal of Ophthalmology, St. Louis

16: 193-287 (March) 1933

Experimental Studies in Diathermy Applied to Eye and Orbit: B. Comparison of Thermal Effects of Diathermy, Infra-Red Radiation and Electric Heating Pad. W. F. Moncreiff, J. S. Coulter and H. J. Holmquest, Chicago.—p. 193.
Certain Motor Anomalies of Eye in Relation to Prescribing Lenses. C. Berens, P. T. Connolly and Dorothy Kern, New York.—p. 199.
Chemistry of Sclera. A. C. Krause, Baltimore.—p. 214.
Results of Recent Investigations in Etiology of Trachoma. H. J. Howard, St. Louis.—p. 218.
Details of Cataract Extraction. R. E. Wright, Madras, India.—p. 228.
Extreme Bilateral Exophthalmos: Report of Two Cases with Autopsy Findings in One. H. G. Merrill and L. W. Oaks, Provo, Utah.—p. 231.

American Journal of Pathology, Boston

9: 149-274 (March) 1933

Microincineration of Intranuclear Inclusions in Yellow Fever. E. V. Cowdry, St. Louis.—p. 149.
Studies on Pathogenesis of Erythroleukosis. H. L. Ratcliffe and J. Furth, with assistance of C. Breedis, Philadelphia.—p. 165.
Amyloid Disease of Kidneys. E. T. Bell, Minneapolis.—p. 185.
*Relation Between Mitochondria and Glucose-Glycogen Equilibrium in the Liver. E. M. Hall, Los Angeles, and E. M. MacKay, San Diego, Calif.—p. 205.
Similarity of Virus Pneumonia in Animals to Epidemic Influenza and Interstitial Bronchopneumonia in Man. H. A. McCordock and R. S. Muckenfuss, St. Louis.—p. 221.
Microtechnical Demonstration of Insoluble Lime Salts in Tissues. G. Gömöri, Budapest, Hungary.—p. 253.
Pigment Deposits in Intestinal Muscle Coats and Their Relation to Diet Factors. E. Nachtnebel, Rochester, N. Y.—p. 261.
Structure Suggesting Spinal Cord Found in an Ovarian Dermoid. J. McFarland, Philadelphia.—p. 271.

Mitochondria and Dextrose-Glycogen Equilibrium in the Liver.—Hall and MacKay produced disturbances of the dextrose-glycogen equilibrium in the livers of rabbits by feeding them large quantities of dried and fresh carrots followed by periods of fasting, by feeding dextrose to the fasting animals and by injections of epinephrine in the fasting animals. Excessive amounts of glycogen, as high as 13.1 per cent, were obtained in the animals fed on dried carrots. Amounts ranging from 3.5 to 5.7 per cent were obtained in the animals fed fresh carrots and in those given dextrose. Injections of epinephrine produced mainly glycogenolysis. Marked changes in the mitochondria were observed in the animals fed on dried carrots. In place of the usual short bacilliform rods, long filaments, coarse spherules and plump rods were found condensed about the nucleus and to a lesser degree about the cell membrane. Twelve hours after fasting, this group produced coarse spherules without definite arrangement in the cytoplasm. Many of these

appeared to be semifluid. The administration of dextrose caused hypertrophy and enspherulation of mitochondria, with some tendency to paranuclear arrangement. The authors conclude that some relation exists between the mitochondria of the hepatic cell and the dextrose-glycogen equilibrium. They are unable to say whether or not the chondriosomes act as catalysts, as they appear to do in the synthesis of fat within the hepatic cell.

American Journal of Physiology, Baltimore

103: 517-728 (March 1) 1933. Partial Index

Experimentally Produced Premature Systolic Arrhythmia (Pulsus Bigeminus) in Rabbits: V. Factors That Affect Its Onset, Duration, Arrest and Alteration. W. F. Allen, Portland, Ore.—p. 559.

Studies on Thyroglobulin: II. Absorption of Thyroglobulin and Related Substances from the Alimentary Canal. B. O. Barnes and J. G. Bueno, Chicago.—p. 570.

Chemical Observations on Fluids of Seminal Tract: I. Inorganic Phosphorus, Calcium, Nonprotein Nitrogen and Glucose Content of Semen and of Seminal Vesicle, Prostate and Spermatocele Fluids in Man. C. B. Huggins and Anna A. Johnson, Chicago.—p. 574.

Effects of Prolonging Life of Corpus Luteum in Rabbit by Hysterectomy. S. A. Asdell and J. Hammond.—p. 600.

Physiologic Variations in Glucose Ratio of Blood and Cerebrospinal Fluid. D. J. Cohn, A. Levinson and Frances McCarthy, Chicago. —p. 613.

Effects of Sugar and Electrolyte Solutions on Metabolism and Irritability of Heart Muscle. J. Victor, New York.—p. 620.

Nature of Responses of Smooth Muscle to Adrenine and Augmentor Action of Cocaine for Sympathetic Stimuli. A. Rosenblueth and D. McK. Rioch, Boston.—p. 681.

Excretion of Iodine in Experimental Hyperthyroidism. B. O. Barnes, Chicago.—p. 699.

Studies on Coronary Circulation: II. Absorption of Lactic Acid and Glucose and Gaseous Exchange of Heart Muscle. D. A. McGinty and A. T. Miller, Jr., Emory University, Ga.—p. 712.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

29: 293-436 (March) 1933

Relative Effects Produced by 200 Kilovolt Roentgen Rays, 700 Kilovolt Roentgen Rays and Gamma Rays: I. Distribution of Radiation in a Water Phantom. G. Failla, Edith H. Quimby, L. D. Marinelli and J. E. Rose, New York.—p. 293.

Id.: II. Comparison Based on Effects on Iodides, Eder's Solution and Photographic Film. H. Q. Woodard, Edith H. Quimby and H. R. Downes, New York.—p. 308.

Id.: III. Comparison Based on Effects on Drosophila Eggs and on Wheat Seedlings. P. S. Henshaw, C. T. Henshaw and D. S. Francis, New York.—p. 326.

Id.: IV. Comparisons Based on Biologic Changes Produced in Mammalian Tissues with 200 Kilovolt Roentgen Rays and Gamma Rays. H. J. Bagg and C. R. Halter, New York.—p. 334.

*Id.: V. Comparison Based on Production of Erythema in Human Skin. J. J. Duffy, R. F. McNattin, M. M. Copeland and Edith H. Quimby, New York.—p. 343.

*Id.: VI. Comparison Based on Clinical Observations. R. F. McNattin, New York.—p. 346.

Id.: VII. Correction of Experimental Results. G. Failla, New York. —p. 352.

Roentgen Diagnosis and Localization of Opaque Foreign Bodies in Air Passages. W. F. Manges, Philadelphia.—p. 368.

Inferior Accessory Lobe of Lung. L. G. Rigler and L. G. Ericksen, Minneapolis.—p. 384.

Multiple Tumor Implants in Ventricles Revealed by Ventriculography: Report of Case. J. R. Learmonth and J. D. Camp, Rochester, Minn. —p. 393.

Encephalography in Case of Localized Subcortical Hemorrhage. F. Schreiber, Detroit.—p. 395.

Effect of Roentgen and Gamma Rays on Human Skin.—Duffy and his associates chose patients at random and administered the predetermined dose in order to determine the production of erythema in the human skin. Each patient was seen at weekly intervals for at least four weeks, and the presence or absence of reaction was noted. In their series of tests, the extensor surface of the forearm was used for all irradiations. This field was chosen because the 700 kilovolt machine activates a horizontal tube. Three types of radiations were used in these experiments: radiations produced by 200 and 700 kilovolts, and gamma rays from the radium element pack. Roentgen rays produced at 200 kilovolts were taken as the norm with which the other types of rays were compared. The roentgen output was measured physically before each set of skin tests, so that the error from daily fluctuation was avoided. Roentgen rays at 200 kilovolts produce a threshold erythema on the extensor surface of the forearm with 540 roentgens, measured in air. The rate of output of the 700 kilovolt machine as measured by this biologic effect is 8.6 roentgens per minute at a distance of 50 cm. The 4 Gm. radium pack at 6 cm. has an output of 2.8 roentgens per minute according to the erythema reaction test. The calculated equivalent outputs of the pack for 10 and 15 cm. distances are 1.2 and 0.57 roentgens per minute, respectively.

Clinical Observation of Roentgen and Gamma Rays.—McNattin summarizes his clinical observations as follows: 1. Therapeutic doses of comparable effectiveness may be administered to tumors of the upper respiratory tract by the divided dose method, using 200 or 700 kilovolt roentgen rays, or gamma rays of radium. 2. A survey of such cases treated at the Memorial Hospital with each of the three qualities of radiation indicates that the tumor doses which, as a first approximation, may be considered to be therapeutically equivalent, are: for 200 kilovolt roentgen rays, 6 threshold erythema doses; for 700 kilovolt roentgen rays, 4.7 and, for gamma rays, from 1.6 to 2.2 threshold erythema doses, each administered fractionally over a period of three weeks (or longer in the case of gamma rays). The threshold erythema unit used by the author is equivalent to 600 roentgens of 200 kilovolt roentgen rays filtered by 0.5 mm. of copper and 3 mm. of aluminum, including back scattering, and administered at one time. When these tumor doses are administered, the skin reaction is marked in the case of the 200 kilovolt roentgen rays, also with the gamma rays, and, thus far, the least severe reaction has been in the cases treated with 700 kilovolt roentgen rays. On the other hand, after the skin has healed, the mildest subsequent changes are found in the cases treated with gamma rays. The constitutional effects have been relatively mild in patients treated with 700 kilovolt roentgen rays, and about equally severe in all cases treated with 200 kilovolt roentgen rays and those treated with the radium pack.

American Journal of Tropical Medicine, Baltimore

13: 141-242 (March) 1933

Recent Distribution of Malaria in Southeastern United States. M. F. Boyd and G. Ponton, Tallahassee, Fla.—p. 143.

Malaria in the Philippine Islands. P. F. Russell, Manila, P. I.—p. 167.

*Laboratory Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever, with Especial Reference to Cross Immunity Tests. L. F. Badger, Washington, D. C.—p. 179.

*Typhus Fever: Some Notes on Cultivation of Virus and on Active Immunity. H. A. Kemp, Dallas, Texas.—p. 191.

Notes on Relapsing Fever in Panama, with Especial Reference to Animal Hosts. L. H. Dunn and H. C. Clark, Panama, Rep. of Panama. —p. 201.

African Sleeping Sickness: Review of Nine Thousand Cases from a Central African Clinic. E. R. Kellersberger, Bibanga, Belgian Congo, Africa.—p. 211.

Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever.—Badger states that two members of the worldwide typhus-like group of fevers occur endemically in the United States: endemic typhus and Rocky Mountain spotted fever, which is now known to occur in widely separated sections of the country. The identification in the laboratory of an unknown strain of virus as one of endemic typhus or as one of spotted fever is based on the following criteria: The clinical manifestations and pathologic anatomy produced in animals by the unknown virus must be similar to those produced by the known virus; agglutinins for Bacillus proteus X_{19} are produced in the serum of the rabbit and the monkey; definite and complete cross immunity is produced with a known strain of the suspected virus. In addition to these criteria, the cultures of the cardiac blood of animals from which transfers are made must be consistently negative bacteriologically. In performing cross immunity tests, precautions must be taken to rule out secondary infections and nonspecific immunity.

Typhus.—Kemp attempted to cultivate the virus of typhus from the blood of ten patients with endemic typhus. He used dextrose-cystine-brain-veal agar, a medium known to be suitable for the cultivation of Pasteurella tularensis. Incubation was carried out aerobically and under conditions of reduced oxygen tension. Gram-positive diphtheroids were obtained from six of the ten patients, and a gram-negative rod belonging to the proteus group was obtained from two. None of these organisms produced signs or symptoms of typhus when inoculated into guinea-pigs. The same animals were not immune to typhus passage virus. Attempts to cultivate the virus from blood cultures or infected tissue (guinea-pig tunica vaginalis) on Kendall's K medium, both liquid and solid, were completely unsuccessful. A strain of Bacillus proteus (American type culture 881), carried through ten generations on liquid K

mediums with both daily and weekly transfers, did not become pathogenic for guinea-pigs. The same animals were found afterward not to be immune to passage virus. Evidence obtained from tissue culture seems to show that the virus is an obligatory parasite. Cultivation in the living animal body (Zinsser and Castaneda) seems to offer the best means for developing quantities of the virus.

Annals of Otol., Rhinol. and Laryngology, St. Louis

42: 1-320 (March) 1933

*Cicatricial Stenosis of Larynx. L. H. Clerf, Philadelphia.—p. 1.
Histology and Chronic Inflammation of Nasal Mucous Membrane. L. A. Schall, Boston.—p. 15.
Nasal Accessory Sinuses as Foci of Infection in Chronic Arthritis. L. M. Hurd, New York.—p. 39.
Pulmonary Complications of Tonsillectomy: Report of Three Cases. J. A. Babbitt, Philadelphia.—p. 47.
Cavernous Sinus: Anatomic and Clinical Considerations. E. H. Campbell, Philadelphia.—p. 51.
Resistance of Upper Respiratory Mucosa to Infection. C. S. Linton, St. Louis.—p. 64.
Vertical Semicircular Canals in Light of Recent Work. W. J. McNally, Montreal, Canada.—p. 82.
Hematology and Blood Dyscrasias in Relation to Diseases of Eye, Ear, Nose and Throat. O. H. P. Pepper, Philadelphia.—p. 87.
Cardiovascular Diseases in Relation to Retina. N. M. Keith, Rochester, Minn.—p. 95.
Practical Application of Wittmaack's Theory of Pneumatization. R. Almour, New York.—p. 112.
Rhinologic Aspects of Tear Sac Surgery. E. King, Cincinnati.—p. 126.
Improved Hearing in Fixation Deafness: Case Reports—Comments. E. R. Lewis, Los Angeles.—p. 135.
Use of Author's Improved Bronchoscope and Esophagoscope in Diagnosis and in Removal of Foreign Bodies. S. Israel, Houston, Texas.—p. 157.
*Influence of Sympathetic Nervous System on Internal Ear. A. B. Murphy, Everett, Wash.—p. 166.
Microscopic Observations of Petrous Apex. H. N. Glick, St. Louis.—p. 175.
Waves Versus Vibrations in Otology. F. P. Emerson, Boston.—p. 192.
Antroscopy and Its Relation to Anatomy of Maxillary Sinus. E. Simon, Albany, N. Y.—p. 198.
*Epistaxis in Pregnancy Requiring Ligation of External Carotid: Review and Case Report. A. Strauss, Cleveland.—p. 230.
Acute Mastoiditis: Early Operation or Delayed? V. V. Wood, St. Louis.—p. 240.
Cause of Otosclerosis: Phylogenesis of the Ear. L. K. Guggenheim, St. Louis.—p. 251.
Neoplasms of the Nose, Throat and Ear: Carcinoma of Hypopharynx. J. C. Beck and M. R. Guttman, Chicago.—p. 286.

Cicatricial Stenosis of Larynx.—Clerf reports a series of twenty-eight cases of cicatricial stenosis of the larynx found unsuitable for direct laryngoscopic dilation. All the patients had been tracheotomized for relief of dyspnea. In twenty-one, high tracheotomy had been performed; in sixteen there was an atresia of the airway. There was atresia in twelve of the thirteen cases of postdiphtheritic stenosis. Fifteen cases were treated by laryngostomy, followed by packing the larynx and using various forms of tube dilators. Atresia was present in seven of these cases and a portion of the cricoid cartilage had been destroyed in nine. One patient became discouraged and discontinued treatment. Three have not been cured, although an epithelialized airway is present. The author concludes that improperly performed tracheotomy and inadequate after-care are the most common factors in the etiology of cicatricial stenosis of the larynx. Recognition of this fact is of great importance in prophylaxis. The translaryngeal fixation operation seems to be the method of choice in the treatment of cases of cicatricial stenosis of the larynx that cannot be treated by the more conservative methods. This procedure obviates the need for frequent, time consuming, painful dressings and changes of apparatus. The duration of treatment and the period of hospitalization are shortened. Results, even in cases in which there is a loss of the normal supporting tissues of the larynx, are uniformly good.

Sympathetic Nervous System and the Internal Ear.—Murphy studied the effect on the labyrinth of interruption of the cervical sympathetic innervation in animals and in man. The first, second and third thoracic ganglions as well were interrupted in some of the cases. Spontaneous phenomena relative to the labyrinth were absent. Variations beyond normal limits in the threshold of excitability of the labyrinth could not be determined. General vasomotor changes, evidenced by pallor and sweating, were the same, regardless of the side from which they were induced. The variations in past pointing can be accounted for by the increased muscular tone in the extremity rather than by labyrinthine influence. The vasodilatory innervation to the inner ear may be part of the cranio-autonomic system.

Epistaxis in Pregnancy.—Strauss reports a case of epistaxis in a pregnant woman, aged *27*, in whom there was constant bleeding until ligation of the external carotid was performed on the seventh day. There was no further nosebleed. On the ninth day the patient aborted a four to four and a half months old fetus. She was discharged on the ninth postoperative day. From the study of this case and a review of the literature the author concludes that, in a case of severe uncomplicated epistaxis when local treatment and transfusion fail, ligation of the external carotid should be performed to save the life of the patient. Severe epistaxis during pregnancy may be stopped by terminating pregnancy. Ligation of the external carotid artery to stop epistaxis in pregnancy should be preferred in order to save the life of the child.

Archives of Pathology, Chicago

15: 321-464 (March) 1933

Histologic Changes in Thyroid Gland of Rabbit Following Injection of Urine. C. A. Hellwig, Wichita, Kan.—p. 321.
Coccidiosis of Liver in Rabbits: II. Experimental Study on Mode of Infection of Liver by Sporozoites of Eimeria Stiedae. H. Smetana, New York.—p. 330.
Angiomatous Malformations of Brain: Report of Two Cases of Angioma Racemosum. V. Levine, Chicago.—p. 340.
*Anatomic Lesions of Fatal Mercurial Intoxication from Salyrgan. M. Rosenthal, Brooklyn.—p. 352.
Pathology of Bronchiectasis. I. H. Erb, Toronto, Canada.—p. 357.
*Attempt to Transmit Poliomyelitis to Splenectomized Guinea-Pigs. H. Chor, St. Louis.—p. 387.

Anatomic Lesions from Salyrgan.—Rosenthal states that, although the impression of the lesser toxicity of salyrgan is probably justified, he presents a report that concerns a patient with congestive heart failure who received this mercurial diuretic shortly before death and who showed definite anatomic signs of mercurialism at necropsy. Since only a small quantity of salyrgan was given, the author's patient apparently possessed an increased susceptibility to the drug, a suggestion supported by the evidence found by Andrews in his case. In view of the increasingly widespread use of salyrgan and the numerous favorable reports from experimental and clinical studies of its action, this case is of interest, since it supports the doubt held by some authors as to the absolute harmlessness of the drug by the actual demonstration in man of structural lesions due to the presence of mercury in the tissues.

Attempt to Transmit Poliomyelitis to Splenectomized Guinea-Pigs.—According to the experiments of Chor, splenectomized guinea-pigs do not acquire the nerve lesions characteristic of poliomyelitis following inoculation with potent monkey virus, either in direct or in passage experiments. Splenectomized guinea-pigs show a decrease in resistance to such inoculation, which produces in many a condition characterized by fever, general sluggishness and lymphoid hyperplasia, with death often occurring within fourteen days.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

14: 133-188 (March) 1933

Therapeutic Use of Polarized Air. W. Bierman, New York.—p. 133.
The Cancer Problem of the General Surgeon. M. Thorek, Chicago.—p. 138.
*Cancer of Cervix Uteri: Consideration of Methods of Treatment in Addition to Surgery and Irradiation. R. J. Behan, Pittsburgh.—p. 144.
Work of Special Committee of Physical Therapy of Medical Society of the State of New York. R. Kovács, New York.—p. 150.
Teaching of Physical Therapeutics in Medical School Curriculum. F. H. Krusen, Philadelphia.—p. 154.
Physical Therapy in Public Hospitals of New York City. C. F. McCarty, New York.—p. 160.
Future Problems in Education of Physical Therapy Technicians. Mary Elizabeth Hibbler, New York.—p. 163.
Development of Present Standards for Physical Therapy Technicians. Kathleen F. King, New York.—p. 166.
Value of Physiotherapy in Visiting Nurse Organization. Helen King, Detroit.—p. 168.

Cancer of Cervix Uteri.—Behan states that, in cancer of the cervix, surgery, which includes endothermic removal and desiccation, does not give as good results as does surgery and irradiation. When ligation of the blood supply in addition to increased calcium intake and proper diet and hygiene is added to surgery and irradiation, there is an increase in the percentage of three and five year cures, and better results are attained than with surgery alone or in combination with irradiation. From the author's point of view, auxiliary methods of treat-

ment are only indications of one's efforts to seek other means, in addition to those usually employed, for the improvement of cancer patients.

Archives of Surgery, Chicago

26: 345-538 (March) 1933

*Wound Healing in Anterior Gastro-Enterostomy Following Various Methods of Suture: Experimental Study in Dogs. K. H. Martzloff and G. R. Suckow, Portland, Ore.—p. 345.

Etiology of Gallstones: IV. Is Cholesterol Excreted by Gallbladder Mucosa? E. Andrews, L. E. Dostal and L. Hrdina, Chicago.—p. 382.

Calcinosis Universalis. B. J. Hein, Toledo, Ohio.—p. 389.

Traumatic Encephalitis: Case Reports of So-Called Cerebral Concussion with Encephalographic Findings. A. E. Bennett and H. B. Hunt, Omaha.—p. 397.

*Experimental Ileus: III. Prolongation of Life for Seventy Days After High Intestinal Obstruction by Administration of Sodium Chloride and Nutritive Material into Intestine Below the Site of Occlusion. H. P. Jenkins and W. F. Beswick, Chicago.—p. 407.

Breaking Strength of Healing Fractured Fibulas of Rats: VI. Observations on Influence of Bilateral Ovariectomy. R. M. McKeown, S. C. Harvey and R. W. Lumsden, New Haven, Conn.—p. 430.

*Syphilis of Stomach, with Especial Reference to Its Recognition at Operation. K. A. Meyer and H. A. Singer, Chicago.—p. 443.

*Resected Knee Joints. R. K. Ghormley and E. A. Brav, Rochester, Minn.—p. 465.

"Orbital Inclusion" Cysts and Cysto-Adenomas of Parotid Salivary Glands. C. J. Kraissl and A. P. Stout, New York.—p. 485.

Preserved Fascia in Hernia Repair, with Especial Reference to Large Postoperative Hernias. A. R. Koontz, Baltimore.—p. 500.

*Stab Wound of Heart: Report of Two Cases. F. Beekman, New York.—p. 510.

Exposure of Heart to Atmospheric Pressure: Effects on Cardiac Output and Blood Pressure. A. Blalock, Nashville, Tenn.—p. 516.

Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; J. Verbrugge, Antwerp, Belgium; A. A. Kutzmann, Los Angeles; A. B. Hepler, Seattle, and R. Gutierrez, New York.—p. 522.

Wound Healing in Anterior Gastro-Enterostomy.—Martzloff and Suckow present a study based on experimental observations on forty-four dogs, which they undertook in order to determine whether serosal cysts would form between apposed peritoneal surfaces and also what differences, if any, occurred in healing following the use of various suture methods. Anterior gastroduodenostomies were performed by various suture methods, while the suture material was uniform throughout. The most rapid and uncomplicated healing on the anterior aspect of the gastroduodenal ostium was obtained by the use of a single layer of serosubmucosal presection silk sutures. Separate suture of the mucosa, whether employed anteriorly or posteriorly as in the three layer suture methods, not only is unnecessary for rapid mucosal healing but is probably a retarding factor and therefore an undesirable as well as an added technical step. Mucosal healing, like healing along the line of apposition, was most rapid with one layer presection sutures. Four types of suture methods were used on the posterior aspect of the gastroduodenal ostium. The best healing was obtained either with an inner row suture passed through all coats of the stomach and intestine as an ordinary continuous stitch or with a similar suture passed through serosa and submucosa, leaving the cut edges of the mucosa free. The latter confirms the authors' observations on the anterior aspect of the ostium, that separate suture of the mucosa is not necessary for rapid mucosal healing. Good posterior healing was also obtained with the three layer suture technic, and most undesirable of all was the healing following the use of an inner row lock-stitch suture, which has a strangulating effect on the involved tissue. The authors believe that their observations warrant the conclusion that fine plain catgut, when passed through the entire thickness of the gastric or intestinal wall, does not cause the development of mucosal inclusions along the course of the suture, as in the case of improperly placed silk suture material. Their observations also indicate that when silk suture material is placed without piercing the gastro-intestinal lumen its presence causes practically no inflammatory reaction. Halsted sutures so placed tend to migrate toward the serosa, while those that pierce the mucosa become infected, are the cause of mucosal inclusions in the intestinal wall and slough into the lumen either through the intestinal wall or along the line of apposition. If silk suture material is used, it is probably preferable to use interrupted sutures.

Experimental Ileus and Sodium Chloride.—In high intestinal obstruction an important factor in the cause of death is the loss of digestive secretions. This view is supported by Jenkins and Beswick's experiment, in which some animals lived from fifty-two to seventy days with a high obstruction. The rôle of the sodium chloride solution, administered daily through a jejunostomy opening below the obstruction, was to replace the water and important blood electrolytes, fixed base (chiefly sodium) and chloride ions, ordinarily lost through failure of resorption and vomiting. In regard to obstruction low in the intestinal tract or complicated by necrosis of the intestine, the loss of digestive secretions may be a factor in the cause of death; but this is of varying importance, depending on the length of intestine above the obstruction which would offer opportunity for some resorption of the secretions. It is in this group that toxemia probably plays the more important part, and in man operative treatment should be resorted to immediately. The beneficial effect of the administration (subcutaneously or intravenously) of saline solutions clinically in cases of intestinal obstruction appears to depend largely on the extent to which the body has suffered from the loss of digestive secretions from failure of resorption and vomiting. When toxemia is a conspicuous factor, its benefit may be masked to some extent.

Syphilis of Stomach.—Meyer and Singer state that the features that serve to distinguish syphilis of the stomach from carcinoma are as follows: There is a striking disparity in many cases between the extent of the lesion as determined roentgenologically and the extent as observed operatively by palpation. Whereas in carcinoma one generally finds at laparotomy a more extensive involvement than the roentgenogram indicates, in syphilis of the stomach there is a surprising paucity or complete absence of changes as determined by palpation. The common lesion of gastric syphilis is not a spherical prominence as in a tumor, gummatous or neoplastic, but a flat infiltrate that leads to a plaquelike thickening of the gastric wall. When thin, the infiltrate is readily overlooked. When thick, its relatively soft consistency and pliability distinguish it from carcinoma. On cross-section, the increase is seen to be due to an edematous fibrous tissue located chiefly in the submucosa. Inspection of the interior of the stomach generally discloses one or more superficial, serpiginous ulcers involving a large part of the plateau formed by the infiltrate. The base of the syphilitic ulcer, contrary to the peptic variety, is situated at a higher level than the normal mucous membrane. Fibrous and edematous thickening of the serosa and adhesions, when present, suggest an inflammatory rather than a neoplastic lesion. Associated syphilitic changes that may be detected during the course of the operation include hepatic, intestinal and splenic syphilis. Of these, the coexistence in the liver of gummas, deep stellate scars or subtotal destruction of the left lobe is of greatest aid in the recognition of the type of gastric disease present. The authors report two cases in which the gross features of the gastric lesion led to the correct diagnosis. One patient was operated on by a colleague who, on palpating the stomach, immediately apprehended that he was dealing with an unusual condition and predicted with confidence that the involvement was syphilitic. The diagnosis in the other patient was based chiefly on the observations made at operation, since from biopsy the condition was reported as simple nonspecific inflammation.

Resected Knee Joints.—Ghormley and Brav studied the clinical history, roentgenograms, lesions discovered grossly and microscopically and results of inoculation of guinea-pigs in a series of 236 resections and nine amputations of the knee joint. The preoperative diagnosis was found to be incorrect in 24.4 per cent of the cases of tuberculosis and in 13.7 per cent of the cases of nontuberculous arthritis. The gross specimens and roentgenograms were found to vary so widely as often to prevent the possibility of accurate diagnosis. The inoculation of guinea-pigs proved incorrect in 12.5 per cent of the twenty-four cases in which inoculation was made. The diagnosis made by microscopic examination of tissue removed at the time of operation has been found to be accurate in all but 3.2 per cent of the cases, an error of omission.

Stab Wound of Heart.—Beekman reports two cases of stab wounds of the chest that involved the heart. In the first there was a perforating wound of the right ventricle, which was rapidly fatal as a result of loss of blood. In the second there was a penetrating wound of the musculature of the left ventricle, a cardiac tamponade developing, which was ten-

porarily relieved by the aspiration of blood from the pericardial sac; this case later came to operation, and the wound was sutured. The patient recovered, following a stormy convalescence in which pneumonia of both lungs, an abscess of the right lung and empyema developed.

Arkansas Medical Society Journal, Little Rock

29: 205-224 (March) 1933

Attitude of the American Medical Association Toward Socialism, Industrialism and Insurance Commercialism in Medicine. S. Harris, Birmingham, Ala.—p. 205.
Psittacosis. F. J. Scully, Hot Springs.—p. 209.
Medicine and Public Health. H. T. Smith, McGehee.—p. 214.

California and Western Medicine, San Francisco

38: 145-232 (March) 1933

The Private Practitioner and the Health Department. C. R. Howson, Los Angeles.—p. 145.
*Perinephritis: Suppurative and Nonsuppurative. C. P. Mathé, San Francisco.—p. 149.
Physique and Psyche in Phthisis. K. P. Jones and E. Bogen, Olive View.—p. 156.
Every Child Is Different. W. P. Lucas and Helen Brenton Pryor, San Francisco.—p. 163.
Veteran Hospitalization Problems. W. H. Geistweit, Jr., San Diego.—p. 165.
Doctors and Clinics. C. L. Mulfinger, Los Angeles.—p. 167.
Etiology of Inguinal Hernias. P. Stephens, Los Angeles.—p. 168.
The Doctor of Tomorrow. A. Gatewood, Chicago.—p. 171.

Perinephritis.—Mathé states that suppurative and nonsuppurative perinephritis occur independently in a certain number of cases, besides being secondary to diseases of the kidney and other extraneous lesions. Chronic perinephritis is divided into (1) fibrosis of the renal capsule; (2) chronic cicatrizing perinephritis with sclerosis of the perineal fat; (3) fibrolipomatous perinephritis in which the fatty capsule is sclerosed, indurated and hypertrophied, sometimes forming a veritable lipoma, which may invade the renal parenchyma, and (4) suppurative perinephritis or perinephric abscess, in which the inflammatory processes have undergone suppuration. The diagnosis of chronic perinephritis is obscure. Important points in distinguishing it are persistent pain, absence of urinary changes and (the author's sign) lack of renal mobility, as evidenced by taking a pyelogram in the standing position. This lack of renal mobility demonstrates without any doubt that there are inflammatory processes of the perinephric tissues which anchor the kidney in place. The most important points in the diagnosis of perinephric abscess are persistent fever, relative lack of urinary changes, obscuration of the roentgenologic shadow of the kidney and of the muscular and skeletal structures of the renal fossa, displacement of the ureter, and immobility of the kidney as evidenced by palpation and when making a pyelogram in the vertical position. The treatment of persistent, chronic, cicatrizing and fibrolipomatous perinephritis consists of nephrolysis and partial decapsulation by which the kidney is decompressed and liberated from its pathologic encasement, adhesions and conglutinations.

Iowa State Medical Society Journal, Des Moines

23: 115-186 (March) 1933

Discussion of the Final Report of the Committee on the Costs of Medical Care. O. J. Fay, Des Moines.—p. 115.
Study of Incidence of Various Etiologic Types of Heart Disease in Iowa: Review of One Thousand Three Hundred and Twenty-Nine Cases. H. W. Rathe and W. D. Paul, Iowa City—p. 125.
*Some Data on Uterine Cancer. N. F. Miller, Ann Arbor, Mich.—p. 132.
Lateral Sinus Thrombosis Complicating Mastoiditis. R. H. Parker, Des Moines.—p. 136.
Syndrome of Internal Derangement of Knee Joint: General Review of Semilunar Cartilage Injuries and Loose Bodies. J. Kulowski, Iowa City.—p. 140.
Observations on Posttonsillectomy Patients. M. J. Joynt, Le Mars.—p. 150.
Blood Picture and Certain Related Clinical Implications. F. H. Lamb, Davenport.—p. 153.

Uterine Cancer.—During a ten year study of 219 consecutive patients with cancer of the female generative organs, Miller observed that the most significant early symptom of uterine cancer is abnormal discharge. Usually this appears as bleeding or "spotting" but may take the form of an abnormal leukorrheal discharge. The spotting is intermenstrual, progressive and prone to follow trauma. Spotting is far more significant as a symptom of cervical cancer than is leukorrhea. The sudden appearance of leukorrhea in older women or its sudden change in character is also highly significant. The real need for a definite diagnosis in all patients with suggestive symptoms must be emphasized again and again. The possibility of cancer should be ruled out in every patient presenting indicative symptoms, even to the point of doing a biopsy with microscopic examination of the tissues, if necessary. Physicians who speak on cancer of the female generative organs should avoid discussion of late symptoms, which may lead the patient astray and defeat the purpose of the talk. The early symptoms may be ignored and the patient may wait for further evidence before having her innermost fears confirmed or refuted. Emphasis should be placed on spotting and abnormal discharge. The need for more extensive use of the surer methods of diagnosis is stressed by the high percentage of inaccurate diagnoses before admission.

Journal of Bacteriology, Baltimore

25: 239-321 (March) 1933

Epizootic Hepato-Enteritis in Guinea-Pigs. Z. Morcos, Cairo, Egypt.—p. 239.
Experiments with Kendall's Medium. Harriet M. Carpenter and P. H. Long, Baltimore.—p. 241.
Desiccation and Preservation of Infectious Laryngotracheitis Virus. C. S. Gibbs, Amherst, Mass.—p. 245.
Weighted Mean Method of Averaging Bacterial Counts of Milk. J. W. Bigger and L. L. Griffiths, Dublin, Ireland.—p. 253.
Cytologic Changes During Formation of Endospore in Bacillus Megatherium. S. Bayne-Jones and A. Petrilli, Rochester, N. Y.—p. 261.
Studies of Freshwater Bacteria: I. A Direct Microscopic Technic. A. T. Henrici, Minneapolis.—p. 277.
Pneumococcus Variants Intermediate Between S and R Forms. F. G. Blake and J. D. Trask, New Haven, Conn.—p. 289.
Gram Stain and Differential Staining. M. L. Kaplan and Leah Kaplan, New York.—p. 309.

Journal of Experimental Medicine, New York

57: 349-526 (March 1) 1933

Some Effects of Anterior Pituitary Extracts on Nitrogen Metabolism, Water Balance and Energy Metabolism. O. H. Gaebler, Detroit.—p. 349.
Nutritional Encephalomalacia in Chicks: Influence of Age, Growth and Breed on Susceptibility. A. M. Pappenheimer and Marianne Goettsch, with the assistance of Anna Alexieff, New York.—p. 365.
Studies on Precipitin Reaction: Precipitating Haptens; Species Differences in Antibodies. M. Heidelberger and F. E. Kendall, New York.—p. 373.
Studies on Typhus Fever: X. Further Experiments on Active Immunization Against Typhus Fever with Killed Rickettsia. H. Zinsser and M. R. Castaneda, Boston.—p. 381.
Id.: XI. Report on Properties of Serum of Horse Immunized with Killed Formalinized Rickettsia. H. Zinsser and M. R. Castaneda, Boston.—p. 391.
Splenectomy in Bile Fistula Dogs: Bile Pigment Overproduction, Anemia and Intoxication. F. B. Queen, W. B. Hawkins and G. H. Whipple, Rochester, N. Y.—p. 399.
Manner of Removal of Proteins from Normal Joints. W. Bauer, C. L. Short and G. A. Bennett, Boston.—p. 419.
Cellular Mechanisms of Renal Secretion: Study by Extravital Method: I. Structural Phase of Secretory Mechanism. Jean R. Oliver and Edna Morris Lund, Brooklyn.—p. 435.
Id.: II. Functional Phase of Secretory Mechanism. Jean R. Oliver and Edna Morris Lund, Brooklyn.—p. 459.
*Study of Bacterial Capsule by New Methods. J. W. Churchman and N. V. Emelianoff, New York.—p. 485.
*Epithelial Repair in Recovery from Vitamin A Deficiency: Experimental Study. S. B. Wolbach and P. R. Howe, Boston.—p. 511.

Staining Bacterial Capsule.—Churchman and Emelianoff outline a new method for staining capsules. With this method appearances are produced about the somas of a number of noncapsulated organisms which resemble capsules. The best results have been obtained when young organisms (not more than 18 hours old) from a culture on solid mediums were used for study, although capsules have also been stained in smears from broth cultures and (in the case of Diplococcus pneumoniae) from sputum. Use is made only of stain and fixative, which are applied together. No steps are taken (like preliminary treatment with serum, acetic acid, nutrose), which are designed to render the capsule more readily demonstrable but are likely also to produce somewhat more artificial conditions. Films are made from aqueous suspensions of the bacteria and are air dried. They are then covered with 10 drops of freshly filtered Wright's stain, which is left on until it has evaporated nearly, but not quite, to dryness, when a purplish pink replaces the original color of the Wright's stain. It is probable that staining of the capsule occurs just at this instant. The evaporation usually requires about three minutes. The stain is washed off as rapidly as possible with Clark and Lubs' buffer p_H 6.4

to 6.5 and immediately dried with a fan without blotting. Sometimes the capsule is more satisfactorily stained if the film is rapidly washed with distilled water after the buffer has been used. Excellent specimens may also be obtained by leaving the air dried film in Wright's stain overnight, removing and allowing the stain to evaporate as described, and then washing rapidly with buffer and drying with the electric fan.

Vitamin A Deficiency.—According to the experiments of Wolbach and Howe on white rats, in vitamin A deficiency the replacement stratified keratinizing epithelium is morphologically identical in all locations. All cells of the lowermost layer of the replacement epithelium have proliferative power as in the stratum germinativum of the epidermis. In recovery, in spite of the complete morphologic masking, the epithelium in each region returns to its normal type. The important histologic features of repair involve removal of the layers of cells irreversibly differentiated toward keratinization and direct differentiation of the stratum germinativum into the normal type. These take place simultaneously. The histologic sequences observed in the removal of cells above the stratum germinativum indicate that autolysis, as shown by vacuolar degeneration, and heterolysis, as shown by leukocytic infiltration, are involved. The cycle of metaplasia and recovery in vitamin A deficiency affords an experimental method available for the correlation of nuclear chromatin and types of cytoplasmic activities.

Journal of Immunology, Baltimore

24: 185-265 (March) 1933

Merthiolate as Preservative for Biologic Products: III. Action of Merthiolate on Bacteriophage. H. M. Powell, W. A. Jamieson and F. G. Jones, Indianapolis.—p. 185.
Immunologic Specificity of Brain Tissue. J. H. Lewis, Chicago.—p. 193.
*Comparison of Combining, Antigenic and Toxic Properties of Chemically Altered Diphtheria Toxoid and Toxin. L. Reiner, New York.—p. 213.
Adsorption of Diphtheria Toxoid by Cellulose Derivatives and Iron Hydroxide Gel. L. Reiner, New York.—p. 221.
H and O Agglutination Following Typhoid Vaccination and in an Unselected Group of Individuals. Anna Dean Dulaney, W. T. Wikle, R. L. Stewart, J. D. Rayfield, J. K. Walker, Jr., and A. B. Preacher, Memphis, Tenn.—p. 229.
*H and O Agglutination in Typhoid Fever, Other Febrile Diseases, and in Vaccination. Anna Dean Dulaney and W. T. Wikle, Memphis, Tenn.—p. 235.
Sedimentation Rate of Red Blood Cells of Tuberculous Rabbits Injected with Tuberculin. J. Freund and D. E. Frank, Philadelphia.—p. 247.
*Participation of Cutaneous Epithelium in Immunity Response. L. Dienes, Boston.—p. 253.
Additional Note to Article "Studies on Tobacco Hypersensitivity." Marion B. Sulzberger, New York.—p. 265.

Comparison of Diphtheria Toxoid and Toxin.—Reiner prepared azodyes from crude and from purified diphtheria toxoid by coupling them with the diazonium salt of arsanilic acid. The dyes obtained were purified by dialysis and precipitation with acid at about p_H 4 and p_H 3. The dyes had practically lost their immunizing power but retained their combining power as measured by the Ramon test. The specific toxic and the nonspecific reaction causing properties of the dye were approximately the same as those of the original toxoid or toxin. Micro-arsenic and nitrogen determinations were made on the toxoid dye. High values were obtained for the ratio of arsenic to nitrogen; hence a high content of cyclic amino acids in the toxoid or else a decomposition during the dye formation is assumed.

H and O Agglutination in Typhoid and Vaccination.—Dulaney and Wikle state that, in the usual course of typhoid, both H and O agglutinins are produced, H designating the causative organism and O expressing the body's response to infection with a member of the enteric group of bacilli. H and O agglutinins to appreciable titer (1:500) are not demonstrated in unvaccinated persons suffering from nontyphoid diseases. O agglutinins seem definitely related to infection. Their demonstration in 1:500 to 1:1,000 is highly suggestive of infection by a member of the typhoid-paratyphoid group, since neither vaccine nor other febrile diseases stimulate to such titers. Typhoid vaccine stimulates the production of H agglutinins to high titers and O agglutinins to low titers (1:40 to 1:320). The ordinary Widal test detects only H agglutinins and does not differentiate between infection and vaccination. The use of preserved formaldehyde treated and alcoholized antigens offers an easy and standardized method of demonstrating H and O agglutinins. H and O agglutination is recommended as a laboratory procedure in typhoid, though it could never have the validity of isolation of the causative organism.

Cutaneous Epithelium in Immunity Response.—Dienes points out that the epithelium of the skin is probably sensitized in allergic (contact) dermatitis and certain cases of drug idiosyncrasy. The hypersensitiveness of the epithelium develops by contact with the injurious agent in the same manner as the usual forms of hypersensitiveness. The tuberculin type of skin reactions presents many characteristics that suggest the direct participation of the cutaneous epithelium in the reaction. The characteristic necrosis in the reactions is often limited to the epithelium and a thin layer of connective tissue below it. The epithelium is involved early before the macroscopic reaction is strong. The epithelium is often infiltrated with polymorphonuclear leukocytes even in slight tuberculin reactions. The occurrence of necrosis is in no direct connection with the size of the reaction or with the general sensitiveness.

Journal of Nervous and Mental Disease, New York

77: 233-344 (March) 1933

Experimental Convulsive Seizures. S. B. Wortis, New York.—p. 233.
Hypermobility of Joints with Superimposed Postencephalitic Parkinsonism: Case. J. J. Michaels and Olive M. Searle, Ann Arbor, Mich.—p. 246.
*Subacute Combined Degeneration of Spinal Cord with Symptom of Lhermitte in "Pernicious Anemia": Report of Case. D. M. Olkon, Chicago.—p. 256.
Delayed Mental Disorders Following Cranial Traumatism and Their Psychopathologic Interpretation. A. Gordon, Philadelphia.—p. 259.
Emile Kraepelin, Psychiatrist and Poet. Louise Brink and S. E. Jelliffe, New York.—p. 274.

Subacute Combined Degeneration of Spinal Cord.—Olkon reports a case of severe anemia in which the final diagnosis was the Lhermitte symptom with degeneration of the spinal cord. The patient complained of numbness of the hands and fingers, tingling of the legs and arms, and electrical shock-like sensations on moving the head downward and then upward. The gait was at times dragging and spastic. The tendon reactions were exaggerated, more on the left side. The Rossolimo sign was present. The plantar reflex was suggestive of the extensor type; while not marked, it was not a negative one, particularly on the left side. The vibration sense was lost, indicating changes in the posterior columns. The Rossolimo and Babinski signs were indicative of changes in the lateral columns, particularly the pyramidal tracts. The increased lymphocytic percentage might suggest a form of leukemia, but, lacking all corroborative observations, such a possibility is negated. Multiple sclerosis and tabes were ruled out by serologic and clinical studies. The diagnosis of subacute degeneration of the cord was based on the progressive onset of the paresthesias, the dysasthesias, the loss of vibratory sensation in the limbs, the achylia gastrica, which still persists, the progressive weakness with little loss of weight, the peculiarly lemon-tinged skin, the tachycardia without definite clinical heart involvement, and the remission under liver therapy. The author concludes that the Lhermitte phenomenon is unusual in this connection.

Journal of Urology, Baltimore

29: 235-360 (March) 1933

Estimate of Value of Urethrogram and Cystogram in Diagnosis of Prostatic Obstruction. E. G. Crabtree and M. L. Brodney, Boston.—p. 235.
*Use of Diothane as Local Anesthetic in Urology. G. F. McKim, P. G. Smith, T. W. Rush and T. H. Rider, Cincinnati.—p. 277.
*Traumatic Rupture of Urethra. C. Haines, Sayre, Pa.—p. 285.
Study of Certain Urologic Complications Associated with Fractured Pelvis. E. W. White, Chicago.—p. 295.
Study of Cause of Death in Genito-Urinary Disease: Preliminary Report. D. W. MacKenzie and M. I. Seng, Montreal, Canada.—p. 321.
Blood Determinations of Ammonia and Sulphur, as Factors in Uremia of Urinary Obstructions. C. G. Bandler and J. A. Killian, New York.—p. 337.
Congenital Absence of One Kidney: Report of Case Showing Aplasia of Secreting Portions of Uriniferous Tubules. W. C. Langston, Little Rock, Ark.—p. 355.

Anesthetic in Urology.—McKim and his associates used piperidinopropanediol diphenyl urethane hydrochloride for local infiltration anesthesia in concentrations varying from 0.25 to 1 per cent in a total of fifty-nine cases comprising fourteen cystotomies, six scrotal varectomies, four operations for hydrocele, one epididymectomy, one orchidectomy, nine vasectomies, twelve urethral caruncles, one urethral varicotomy and eleven adult circumcisions. With one exception the results were

superior to those obtained in similar cases when using other local anesthetizing agents. The failure in a suprapubic cystotomy may have been due to a poor infiltration technic in an extremely nervous and apprehensive person. The authors injected 75 cc. of a 1 per cent solution of piperidinopropanediol diphenyl urethane hydrochloride but they made no subsequent check on the concentration of this solution. A light supplemental gas anesthesia permitted the satisfactory completion of the cystotomy. The amount of solution injected has varied with the type of surgical procedure contemplated. There has been no suggestion of toxic symptoms or local tissue irritation. A definite delay in the appearance of postoperative pain has been noted and the authors have been impressed with its mildness when it has appeared. They conclude that piperidinopropanediol diphenyl urethane hydrochloride commends itself to urologists because of its lack of local irritation, relatively high anesthetic properties, extremely low toxicity, prolonged anesthesia and ease of sterilization.

Traumatic Rupture of Urethra.—Haines feels that conservative treatment, especially in the hands of the less experienced, is a more satisfactory method of handling cases of incomplete or complete rupture of the urethra, whether in the bulbous portion or posterior to it, than is the more radical method advocated by many authors. He believes that each case is a case unto itself: no two cases will present the same identical injury, nor will any two show the same amount of shock or the same ability to combat it. Whether one relies on catheter drainage, suprapubic cystotomy, perineal section, end-to-end anastomosis, or a combination of all four depends entirely on the individual case, the length of time following the injury, and its severity. The condition of the patient should be the guiding factor in one's choice and method of treatment.

Kansas Medical Society Journal, Topeka

34: 83-122 (March) 1933

Undulant Fever: Report of Cases Occurring in Kansas. E. G. Brown, Topeka.—p. 83.
Injection of Varicose Veins with Chemical Action. L. W. Angle, Kansas City.—p. 89.
Birth Injuries in Newly Born. J. A. Wheeler, Newton.—p. 93.
Cation Balance Theory of Hypertension. L. K. Zimmer, Lawrence. —p. 96.
Experimental Work on Dementia Praecox. M. Gerundo, Topeka.—p. 100.

Kentucky Medical Journal, Bowling Green

31: 125-172 (March) 1933

Carotenemia or Xanthosis. W. U. Rutledge, Louisville.—p. 128.
Bronchiectasis: Report of Case. J. W. Scudder, Liberty.—p. 132.
Spinal Anesthesia in Conquest of Operative Pain. J. G. Sherrill, Louisville.—p. 133.
Multiple Malignancy: Exhibition of Specimen: Report of Case. L. Frank and A. J. Miller, Louisville.—p. 138.
Diagnosis and Treatment of Empyema of Childhood. C. Bailey, Harlan. —p. 139.
*Stricture of Female Urethra. W. T. Briggs, Lexington.—p. 143.
Abscess of Lung and Its Treatment. O. O. Miller, Louisville.—p. 148.
Diverticulitis of Cecum: Report of Case. J. M. Frehling, Louisville. —p. 152.
The Cancer Patient. D. Y. Keith and J. P. Keith, Louisville.—p. 160.
Ringworm of the Feet. W. J. Young, Louisville.—p. 164.

Stricture of Female Urethra.—Briggs points out that stricture of the female urethra is common in patients presenting urinary symptoms. Its incidence as estimated by various authors shows a wide variation but is probably not less than 10 per cent. Aside from congenital narrowing of the meatus and the atresia of age, most strictures are the result of trauma, regardless of whether the trauma is mechanical, surgical, chemical or bacterial. The pathologic changes that take place in the urethra account for the local symptoms, which in many cases are severe enough to throw the whole body out of balance, especially the nervous system. Aside from prostatitis, prostatic abscess and extravasation of urine, the symptomatology is identical to that in the male. More than 50 per cent of the author's cases presented a bacterial cystitis, which probably accounted for some of the bladder symptoms, especially when the stricture was of wide caliber. Diagnosis of stricture at the meatus can often be made at a glance. In deeper strictures, large catheters or bougies of graduated sizes should be used. The author made the diagnosis in most of his cases by the routine use of a number 18 F. glass catheter. Except in resilient strictures requiring repeated dilations, the prognosis is good; but complete recovery is rare. A stricture of the meatus should be cut, and the prognosis is unusually good. In deeper strictures, gradual dilation is the treatment of choice.

Laryngoscope, St. Louis

43: 153-232 (March) 1933

Analysis of Seven Cases of Osteomyelitis of Frontal Bone Complicating Frontal Sinusitis. H. P. Mosher and D. K. Judd, Boston.—p. 153.
Circumscribed Arachnoid Cyst Giving Symptoms of an Acoustic Neuroma. W. V. Mullin, Cleveland.—p. 213.

Maine Medical Journal, Portland

24: 39-52 (March) 1933

Peptic Ulcer. J. R. Hamel, Portland.—p. 43.

Medical Annals of District of Columbia, Washington

2: 47-70 (March) 1933

*Aschheim-Zondek Test in Teratoma Testis. J. W. Lindsay, Washington.—p. 47.
Inadequate Sexual Function in the Male. W. R. Stokes, Washington. —p. 50.
Technic of Intravenous Injections. M. A. Selinger, Washington.—p. 54.
Trial Aspect of Malpractice Cases. C. S. Baker, Washington.—p. 58.

Aschheim-Zondek Test in Teratoma Testis.—Lindsay believes that the term "early" in its application to the diagnosis and treatment of malignant disease is given a new significance by the appropriate use of the Aschheim-Zondek test. The application of the Aschheim-Zondek test to the study of malignant disease, including teratoma testis, sets apart another group of tumors which may be followed by graphic methods. He believes that this delineation of special groups amenable to special methods of diagnosis and control constitutes the most important phase of the attack on the cancer problem while one awaits improvements in the recognized procedures already available. A most important factor in the value of the Aschheim-Zondek test is its clear demonstration of significant general principles in relation to the local manifestations of cancer. The evidence resulting from the work so far accomplished in connection with the Aschheim-Zondek test appears to offer a most hopeful outlook for the development of other biologic procedures which may broaden the field of precisely studied neoplasms and lay the foundation for further improvement in both diagnosis and therapy.

Medical Journal and Record, New York

137: 177-220 (March 1) 1933

Allergy in General Practice. M. C. Harris, New York.—p. 177.
The United States Pharmacopeia. O. T. Osborne, New Haven, Conn. —p. 183.
Clinical Identity of Visceroptosis (Glénard's Disease) and Recessive Status Lymphaticus. H. A. Houghton, New York.—p. 184.
Preventive Medicine Versus Expectant Treatment. F. Jouard, New York.—p. 188.
Reticulo-Endothelial System. J. K. Narat, Chicago.—p. 189.

Michigan State M. Society Journal, Grand Rapids

32: 155-210 (March) 1933

Some Modern Extensions of Beaumont's Studies on Alexis St. Martin: I. Thirst and Hunger. W. B. Cannon, Boston.—p. 155.
Relation Between Cerebral Diplegia and Birth Injury. T. D. Gordon, Grand Rapids.—p. 165.
Bronchial Asthma Due to Molds: Report of Case. B. A. Credille, Flint.—p. 167.
Treatment of Malignant and Premalignant Dermatoses. C. K. Hasley, Detroit.—p. 168.
The Thyrogenic Heart. J. L. Chester, Detroit.—p. 171.
Trend of Clinic Service in Detroit. D. J. Sandweiss, Detroit.—p. 177.
Intestinal Obstruction Due to Impacted Gallstone: Case Report. J. Johns, Ionia.—p. 180.
Some Notes on Sickness Insurance in Germany, 1932. W. A. Evans, Jr., Detroit.—p. 181.
Medical Participation: The Answer. L. O. Geib, Detroit.—p. 183.

Military Surgeon, Washington, D. C.

72: 189-276 (March) 1933

Bacterial Warfare: Use of Biologic Agents in Warfare. L. A. Fox. —p. 189.
Inguinal Hernia. J. E. Goldthwait.—p. 208.
Relative Value of Roentgen Ray and Physical Signs in Diagnosis of Pulmonary Tuberculosis. W. R. Brooksher, Jr.—p. 211.
Health Conditions in the Philippine Islands. G. F. Lull.—p. 215.
Myasis: Two Case Reports. S. Gayle, Jr.—p. 225.
Simple Auxiliary Lighting Outfit. H. F. Pipes.—p. 228.
American Military History. C. C. Benson.—p. 230.

New England Journal of Medicine, Boston

208: 573-618 (March 16) 1933

Pathology of Chronic Myocarditis. S. Warren, Boston.—p. 573.
Diagnosis of Chronic Nonvalvular Cardiac Disease (Chronic Myocarditis). H. A. Christian, Boston.—p. 574.
Treatment of Nonvalvular Heart Disease of Middle and Old Age. H. Jackson, Boston.—p. 574.
Treatment of Subacute Hemorrhagic Nephritis with Streptococcus Vaccines. C. L. Derick and J. P. O'Hare, Boston.—p. 578.
*Comparative Value of Scratch and Intradermal Methods of Skin Testing in Asthma and Hay Fever of Children. E. S. O'Keefe, Lynn, Mass., and L. B. Burgin, Roxbury, Mass.—p. 582.
Medicine, Ethics and Law. F. J. Cotton, Boston.—p. 584.

Skin Testing in Asthma and Hay Fever.—O'Keefe and Burgin state that, in children with hay fever, the cutaneous or scratch method gave a high proportion (91 per cent) of positive reactions. The intradermal test is only slightly superior to the scratch test. In children with asthma, however, scratch tests showed a low proportion (30 per cent) of positive results. The intradermal test brings the proportion of positive reactions much higher (87 per cent). The scratch test is reliable in the hay fever of children, but in the asthma of children it should be followed by the intradermal test in all cases in which the scratch test is negative.

208: 619-670 (March 23) 1933

*Relation of Subacute and Acute Bacterial Endocarditis to Rheumatic Endocarditis: Study of Sixty-Six Cases with Necropsies. D. Davis and Soma Weiss, Boston.—p. 619.
Appendicitis: Clinical and Pathologic Study. H. F. Howe, Boston.—p. 624.
*Atropine as Diagnostic Aid in Appendicitis. F. M. Findlay, Boston.—p. 630.
Better Gas Anesthesia: Carbon Dioxide Absorption Method. P. D. Woodbridge, Boston.—p. 632.
Smallpox and Vaccination. S. B. Woodward, Worcester, Mass.—p. 641.
Lymphosarcoma of Jejunum. E. H. Taylor, Pittsfield, Mass.—p. 642.
*Ruptured Aneurysm of Hepatic Artery. E. H. Taylor, Pittsfield, Mass.—p. 644.
Some Recent Researches in Epilepsy at Monson State Hospital. R. H. Guthrie, Palmer, Mass.—p. 646.

208: 671-720 (March 30) 1933

Low Pericardiotomy for Acute Suppurative Pericarditis: Report of Two Cases and Twenty-Four New Cases from the Literature. P. E. Truesdale, Fall River, Mass.—p. 671.
Rôle of Psychic Load in Recurrent Attacks of Gastroduodenal Ulcers. M. Einhorn, New York.—p. 681.
Acute Hydramnion Treated by Abdominal Puncture: Report of Case. B. Parvey, Boston.—p. 683.
Arsphenamine in Treatment of Vincent's Angina. Elizabeth Ann Sullivan, Cambridge, Mass.—p. 686.
Urethritis Due to Trichomonas. P. K. Jenkins, Miami Beach, Fla.—p. 687.
Progress in Study of Cardiovascular Disease in 1931. S. McGinn and H. B. Sprague, Boston.—p. 691.

Relation of Bacterial Endocarditis to Rheumatic Endocarditis.—Davis and Weiss point out that the incidence of subacute and acute bacterial endocarditis among 5,215 consecutive necropsy examinations was 0.9 per cent and 0.4 per cent, respectively. A study of the interrelation between rheumatic and bacterial endocarditis revealed that approximately one case of subacute bacterial endocarditis occurred to every ten cases of rheumatic heart disease, and approximately one case of acute bacterial endocarditis to every twenty-five cases of rheumatic heart disease. One case of subacute bacterial endocarditis occurred to approximately every four cases of fatal rheumatic heart disease, and one case of acute bacterial endocarditis to approximately every nine cases of fatal rheumatic heart disease. Rheumatic heart disease occurred more frequently among women, but subacute and acute endocarditis superimposed on rheumatic heart disease developed considerably more often in men (ratio 3:1). The distribution of the degree of rheumatic valvular damage in the forty-seven cases of subacute bacterial endocarditis corresponded with that for 474 cases of rheumatic heart disease, indicating that the development of subacute bacterial endocarditis is independent of the degree of underlying rheumatic endocarditis. The apparent infrequency of advanced mitral stenosis with subacute bacterial endocarditis is explained by the fact that slight or severe "nonactive" rheumatic valvular lesions predispose equally to the development of subacute bacterial endocarditis, and slight lesions are much more common than advanced ones. The same factor is held responsible for the relatively rare occurrence of severe congestive heart failure and auricular fibrillation in the course of subacute bacterial endocarditis. Instances of morphologic evidence of varying grades of healing of the valves were encountered in subacute bacterial endocarditis.

Atropine in Appendicitis.—Findlay found the use of atropine to be of great value in differentiating the pain and tenderness due to acute appendicitis from that due to other conditions. In any suspected case of appendicitis, the patient, if an adult, is given 1/100 grain (0.00065 Gm.) of atropine sulphate by mouth unless nauseated, in which case the drug is administered subcutaneously. A half hour later he is given an enema of 2 quarts of warm soap suds. After the enema is expelled the abdomen is carefully palpated and, if an area of distinct localized tenderness persists in the region of the appendix, a positive diagnosis should be made. If the enema has been only partially expelled and the entire cecum feels full or emits a gurgling sound on palpation, the atropine and enema may be repeated to ensure a thorough emptying of the large intestine. If either pain or local tenderness persists after this procedure, one is justified in making a diagnosis of appendicitis. The author has used this method for four years in a series of more than 300 cases of acute abdominal pain. Of the eighty-six patients operated on on the basis of the test, all but one have shown definite evidence of acute appendicitis. Acute appendicitis did not develop in any of the cases with negative observations in which operation was not performed. Patients suffering from food poisoning, infectious colitis and other forms of gastroenteritis have been given prompt relief from their discomfort by the administration of atropine, which has often been repeated two or three times.

Ruptured Aneurysm of Hepatic Artery.—Taylor reports a case of ruptured aneurysm of the hepatic artery in a man, aged 22, who entered the hospital suffering from a severe hemorrhage from the stomach and acute pain in the epigastrium. There was a history of some pain and distress in the epigastrium about a year before. Four months before admission he had an attack of acute pain in the right lower quadrant, followed by the removal of a gangrenous appendix. Otherwise his previous history was not important. He died eight months later. At necropsy there was no evidence of a malignant condition in any part of the body, or of ulceration in the stomach or duodenum, or of any way, macroscopically, by which bleeding could have occurred into the stomach. It is believed that because the aneurysmal sac communicated with the gallbladder the bleeding occurred into this organ and from there was transmitted to the duodenum and to the stomach.

New Jersey Medical Society Journal, Orange

30: 197-298 (March) 1933

Tuberculosis in School Children. B. S. Pollak and B. P. Potter, Secaucus.—p. 197.
Diagnosis of Pulmonary Tuberculosis in Infancy and Childhood. M. H. Bass, New York.—p. 202.
Relation of Frequent Colds in Children to Diseases of Accessory Sinuses. C. G. Kerley, New York.—p. 209.
Allergic Diseases in Children. S. Blaugrund, Trenton.—p. 211.
*Treatment of Bone Tumors. M. Friedman, Newark.—p. 214.
*Radiotherapy of Thyrotoxicosis. E. A. May, Newark.—p. 222.
Cerebral Hemorrhage of the New-Born. L. Robbin, Newark.—p. 228.
Radiographic Technic. C. F. Baker, Newark.—p. 230.
Present Status of Poliomyelitis from Neurologic Point of View. C. C. Beling, Newark.—p. 241.
Physiotherapy, Use of Respirators and Orthopedic Treatment, in Poliomyelitis. B. F. Buzby, Camden.—p. 244.
Early Diagnosis and Treatment of Acute Anterior Poliomyelitis. L. C. Rosenberg, Newark.—p. 248.

Treatment of Bone Tumors.—Friedman states that, of the eight types of primary bone tumors, four are radiosensitive in varying degrees. They are, in the order of their radiosensivity: endothelial myeloma, multiple myeloma, giant cell tumor and chondroblastic osteogenic sarcoma. This fact is helpful when employed as a therapeutic test to aid diagnosis in a doubtful case. Radiation therapy should be discontinued in favor of surgery if definite results are not obtained in six weeks. Malignant bone tumors are curable under proper therapy. The more differentiated the tumor (i. e., sclerosing osteogenic sarcoma), the higher is the percentage of five year cures. The more undifferentiated the tumor (i. e., osteolytic osteogenic sarcoma), the lower is the percentage of five year cures. The scope of radium and roentgen therapy in the treatment of bone tumors is still to be accurately delineated. No osteogenic sarcoma of any type should ever be curetted.

Radiotherapy of Thyrotoxicosis.—According to May, radiotherapy in the different types of hyperthyroidism should be recognized as one of the most powerful remedies. In plain hyperthyroidism and small toxic goiters it is superior to other methods. It is also indicated in cases of poor surgical risk. The mortality is less than 1 per cent and recurrences are fewer than with surgery. Surgery should be resorted to in acute cases of large toxic goiters with impending heart failure and in persons more than 60 years of age. Preoperative roentgen treatments will lessen the surgical risk and prepare the patient for thyroidectomy better than ligation of the blood vessels, in all cases in which surgery is given preference. Previous irradiation does not render the operation more difficult. Recurrences after operation respond well to radiotherapy. Of 160 patients treated with radiotherapy alone, 132 (82.2 per cent) were cured; 25 (15.6 per cent) were much improved, and 3 (1.9 per cent) were unimproved. Of these, 6 patients included (5 as improved and 1 as unimproved) with large toxic goiters were later operated on and are now cured.

New Orleans Medical and Surgical Journal

85: 645-722 (March) 1933

Expert Medical Witness. S. C. Barrow, Shreveport, La.—p. 645.
Treatment of Toxic Goiter by Means of Radiation Therapy. L. J. Menville, New Orleans.—p. 648.
Cancer Problem. J. M. Martin, Dallas, Texas.—p. 654.
The Typhoid Carrier. N. C. Knight, Indianola, Miss.—p. 662.
Oral Conditions Which Physician Should Note. F. J. Wolfe, New Orleans.—p. 665.
Some Observations on Inaugural Symptoms of Hypertension. S. M. Copland, New Orleans.—p. 668.
History of Bubonic Plague and Personal Experiences. H. W. Knight, New Orleans.—p. 672.

Ohio State Medical Journal, Columbus

29: 145-208 (March 1) 1933

*Nutritional Anemia. E. Scott and C. J. Delor, Columbus.—p. 165.
Estimation of Disability from an Orthopedic Standpoint. W. G. Stern, Cleveland.—p. 170.
Management of Acute Abdomen, with Especial Reference to Use of Spinal Anesthesia. R. C. Austin and H. H. Wagner, Dayton.—p. 176.
*Graphic Methods of Evaluating Remissions in General Paralysis. R. E. Stout, Cleveland.—p. 179.
Imperforate Anus. G. M. Curtis and F. E. Kredel, Chicago.—p. 183.

Nutritional Anemia.—Scott and Delor present experimental proof that the nutritional anemia of the white rat may be relieved by either the feeding of milk from cows fed on a diet consisting of a warm malted and hydrolized hay and grain mixture to which a complex formula of mineral was added, or by the addition of an iron and copper free extract of alfalfa or of a liver oil high in vitamin A to the deficient milk diet. This growth promoting factor is absent or insufficient in the milk of cattle fed on the usual winter dairy ration. This factor, when present in milk following the special feeding of the cattle, is thermolabile. Further evidence has been obtained of the intimate relationship existing between the feed of the cow and the hematopoietic factor or factors in the milk. Milk, to be of the highest nutritive value, must contain the factors resulting from the presence of the vegetable pigments in the food of the cow. The rapidly growing belief in the close association between the vegetable pigments carotene and chlorophyll and vitamin A or its associated factors is strengthened by these experiments.

Evaluating Remissions in Dementia Paralytica.—Stout made a study of the speech, handwriting and tremor of 110 dementia paralytic patients. He noted the rate and degree of improvement following malaria, and the degree of synchronism between this improvement and improvement in the mental and emotional status. Improvement in the objective neurologic signs of dementia paralytica, especially in those due to cortical disease, is a most reliable sign of improvement in the physiologic state of the cortex. Improvement in dysarthria, in involuntary movement, and in the mental and emotional status of dementia paralytica patients becomes evident concurrently following therapeutic malaria. The spontaneous handwriting of these patients discloses not only involuntary movement but also by its content incoordination of thought. Improvement both in form and in thought content occurs following malaria and is evidence of clinical remission. By means of Whipple's steadiness tester, involuntary movements can be recorded and graphically compared. This affords a reliable objective test for the degree of recovery. Advanced optic atrophy and profound dementia have been the only contraindications to this type of examination.

Public Health Reports, Washington, D. C.

48: 183-210 (Feb. 24) 1933

Quantitative Determination of Quartz ("Free Silica") in Dusts. A. Knopf.—p. 183.

48: 211-242 (March 3) 1933

Seasonal Variation of Average Growth in Weight of Elementary School Children. C. E. Palmer.—p. 211.

48: 263-282 (March 17) 1933

Rocky Mountain Spotted Fever: Investigation of Sexual Transmission in the Wood Tick Dermacentor Andersoni. C. B. Philip and R. R. Parker.—p. 266.

48: 283-318 (March 24) 1933

Causes of Illness in Nine Thousand Families, Based on Nation Wide Periodic Canvasses, 1928-1931. S. D. Collins.—p. 283.

South Carolina Medical Assn. Journal, Greenville

29: 27-50 (Feb.) 1933

Use of Willow Bark in Treatment of Malaria: Preliminary Report. W. H. Zeigler, Charleston.—p. 30.
Urethral Stricture in the Female. L. P. Thackston, Orangeburg.—p. 32.
Some Newer Nutritional Facts and Theories: Their Correlation with Otolaryngology. J. W. Jervey, Greenville.—p. 34.
Disease of Rocky Mountain Spotted Fever Type Identified in Marion County (S. C.): Case Reports. B. M. Montgomery, Marion.—p. 40.

29: 51-78 (March) 1933

Training of Doctors in South Carolina. K. M. Lynch, Charleston.—p. 55.
Acute Poliomyelitis. W. Weston, Jr., Columbia.—p. 58.
The Decompensated Heart. H. Smith, Greenville.—p. 60.
Intra-Abdominal Trauma from Nonpenetrating Wounds. D. Jennings, Bennettsville.—p. 63.
Urography in Uterine Anomalies. R. Doughty and M. Mosteller, Columbia.—p. 66.
"Hay Fever" Plants of Charleston, S. C. and Vicinity. J. H. Hoch and J. I. Waring, Charleston.—p. 69.

Southwestern Medicine, Phoenix, Ariz.

17: 77-110 (March) 1933

Surgical Considerations of Gallbladder Disease. W. L. Reid, Phoenix, Ariz.—p. 77.
Some Observations on Senile Cataract. S. A. Schuster and F. P. Schuster, El Paso, Texas.—p. 80.
Research and Cancer Progress. W. B. Coffey, San Francisco.—p. 83.
Biologic Explanation of Cancer: Etiology, Prevention and Treatment. O. S. Fowler, Denver.—p. 87.
Radium Treatment of Carcinoma of Prostate and Bladder. D. M. Davis, Phoenix, Ariz.—p. 91.
Psoriasis Rupioides with Carcinoma. E. W. Johns, Albuquerque, N. M.—p. 95.
*Allergy in Tuberculosis: Study of Twenty Cases. B. Thompson, Tucson, Ariz.—p. 100.

Allergy in Tuberculosis.—In an attempt to study the part allergy plays in tuberculosis, Thompson tested the skin in twenty unselected cases of active pulmonary tuberculosis by the cutaneous and the intradermal method, utilizing extracts of 140 different antigens. The list of allergens used in testing comprised every known protein of possible allergic significance which may have come in contact with the body tissues of these patients by ingestion or inhalation. Of the twenty patients, fourteen retrogressed and six remained clinically stationary during the six-months period prior to the beginning of attempted desensitization, under a regimen of rest and of hygienic, dietary and conservative symptomatic treatment. On roentgenographic and physical examination, twelve patients showed advanced involvement with cavitation, two advanced involvement without cavitation, four moderately advanced disease, and two indications of incipient tuberculosis. Of these patients, seven had been diagnosed tuberculous for a period of five years or more, eleven for a period of from one to five years, and two for a period of less than one year. Of the twenty patients treated by antigen inoculation, eleven showed symptomatic improvement in an average period of 14.2 days, and nine were relieved of symptoms in an average period of 8.5 days. From this study the author concludes that chronic pulmonary tuberculosis may be a scavenger infection, progressing only in tissues rendered hypersensitive and inflamed by a variety of extrinsic and intrinsic allergens, or that tuberculosis may be a primary infection of the tubercle bacillus, producing a hypersensitivity not only to the tubercle bacillus itself but to other allergens, and that the repeated inoculation of these allergens, by crossed reaction, may produce a tissue immunity against the tuberculous

infection. The author's experiment suggests a mode of investigation and treatment in cases of pulmonary tuberculosis which have failed to respond to the time tested conservative methods. Its trial does not contraindicate the continuance of conventional therapy. By relieving irritative symptoms, with the object of putting the chest at rest, it may, however, be possible to shorten the period of tuberculous activity.

Tennessee State Medical Assn. Journal, Nashville

26: 93-136 (March) 1933

Free Clinic Problem. H. B. Everett, Memphis.—p. 93.
Tentative Program in Public Health. A. B. McCreary, Memphis.—p. 95.
Report of Case of Color Hearing and Some Important Advances in Medicine, Which Have Come Since My Graduation Fifty-Six Years Ago. J. L. Minor, Cordova.—p. 104.
Differential Diagnosis and Surgical Management of Hyperthyroidism. W. O. Floyd, Nashville—p. 108.
Relief of Intractable Pain. E. F. Fincher, Jr., Atlanta, Ga.—p. 112.
Correlation of Clinical and Roentgen-Ray Findings in Chest Conditions of Children. S. W. Coley and F. T. Mitchell, Memphis.—p. 116.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

41: 119-182 (March) 1933

Deferred Operation in Treatment of Periappendicular Abscess. K. A. Meyer, Chicago.—p. 119.
Treatment of Pulmonary Abscess. C. A. Hedblom, Chicago.—p. 125.
Ascending Infection to Kidney: III. Experimental Study. W. J. Carson, Milwaukee.—p. 132.
Hemorrhage After Operations on Biliary Tract. W. T. Coughlin, St. Louis.—p. 140.
Xanthomatosis or Schüller's Disease with Cranial Defects. P. A. Bendixen, Davenport, Ia.—p. 147.
Intraperitoneal Rupture of Urinary Bladder Associated with Fracture of Pelvis: Report of Two Cases. J. P. Henderson, Kansas City, Mo. —p. 153.
*Simple Inflammatory Ulceration and Stricture of Jejunum: Report of Case Successfully Treated by Operation. G. W. Nagel, San Francisco.—p. 159.

Inflammatory Ulceration and Stricture of Jejunum.—Nagel reports a case of stricture of the intestine with granulomatous ulceration and perforation and states that the actual causative agent in the nonspecific variety of primary jejunal ulcer has not been determined. The primary event that has brought many of these cases to light has been an obstruction of the intestine with ulceration and perforation above the stricture. Pressure necrosis and ulceration commonly occur above intestinal strictures, whatever the cause of the stricture may be. In the author's case, the large ulcer and the necrotic intestine resulting in perforation appear to be this type of lesion. Stricture of the small intestine, often double, has been observed as a result of temporary incarceration in a hernial sac. Although his patient had been operated on previously for bilateral inguinal hernia, there was no history suggesting such a causative factor; in any event, the location of the strictures high in the jejunum appear to rule out this possible mode of origin. The most likely cause of these strictures seems to be the contraction of cicatricial tissue produced in healing ulcers. The possibility of congenital strictures playing a part in the cause of these lesions must also be considered. Congenital points of narrowing of varying degree are occasionally found in the intestinal tract, especially in the small intestine. Whether or not a stricture of the intestine produces abnormal symptoms depends on the degree of the stricture and the extent and nature of the primary lesion. Congenital stenoses of quite marked degree frequently cause little or no apparent trouble. The author believes that it is possible that the strictures in his case were congenital, as the inflammatory reaction at these points was not marked.

Wisconsin Medical Journal, Madison

32: 145-212 (March) 1933

Some Recent Advances in Medical Sciences (Bacteriology and Immunology as They Apply to Clinical Practice). W. D. Stovall, Madison. —p. 153.
Acute Leukopenic Leukemia and Its Differential Diagnosis. C. H. Watkins, Rochester, Minn.—p. 156.
Leukopenic Syndrome. F. Madison, Milwaukee.—p. 160.
Relative Position of Radiologist in Medical Profession. J. N. Sisk and L. V. Littig, Madison.—p. 164.
Jejunal Feeding in Treatment of "Stubborn" Duodenal Ulcer; and Other Indications for Jejunostomy. E. H. Mensing, Milwaukee.—p. 168.
Report of an Extreme Cleft of Hard and Soft Palate Closed with the Use of Author's Tension Plates. M. N. Federspiel, Milwaukee.—p. 172.
Subacute Bacterial Endocarditis: Case Report. C. E. Constantine, Racine.—p. 177.
Stillbirths in Wisconsin for 1930. L. W. Hutchcroft, Madison.—p. 179.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45: 133-178 (April) 1933

Investigation of Alleged Tuberculous Etiology of Erythema Exudativum Multiforme (Hebra). R. Hallam and J. W. Edington.—p. 133.
Juvenile Acanthosis Nigricans: Case. S. W. Smith.—p. 142.
New Phase in Early Syphilis. A. Whitfield.—p. 145.

British Journal of Ophthalmology, London

17: 129-192 (March) 1933

Ophthalmic Lesions of Botulism: Additional Notes and Research. C. M. Swab and H. F. Gerald.—p. 129.
Localization on Fundus; Contributions on Meridian Faults; New Localizing Perimeter. M. Klein.—p. 145.
Congenital Cataract Showing Unusual Features: Case. D. J. Wood. —p. 158.
Glaucoma: Clinical Note. E. E. Maddox.—p. 161.
*Series of One Hundred Cases of Hypopyon Ulcer, with Especial Regard to Method of Treatment. A. C. Reid.—p. 162.
Marked Papilledema in Pulmonary Emphysema. A. J. Cameron.—p. 167.

Treatment of Hypopyon Ulcer.—Reid presents a series of 100 cases of hypopyon ulcer comprising only those cases which, when first seen by him, presented a hypopyon visible to the naked eye. He has come to the conclusion that the most satisfactory method of treating all hypopyon ulcers at whatever stage they present themselves is with one or more applications of a cautery of the Wessely type, along with certain adjuvant methods. The author has all patients presenting ulcers put to bed, even mild cases. He insists that the patient lie on his back, using but one pillow. The patient is instructed to bathe the eye freely every half hour during the day, and as often at night as he wishes, with a 1:10,000 solution of mercuric chloride. Drops of mild silver protein, 20 per cent, are instilled by a nurse every two hours. This is kept up for forty-eight hours. If there is no advance of the ulcer, the patient is allowed to sit up in bed, followed by getting up in the ward in another forty-eight hours; and two days later, if there is no advance and the surface takes the silver stain all over, the patient is sent home. The most favorable cases thus demand six days in the hospital. Corneal section was reserved for the worst cases, after other methods had failed. The author adopted this method in only two patients after the Wessely cautery.

British Journal of Physical Medicine, London

7: 213-232 (March) 1933

*Tar and Ultraviolet Radiation in Treatment of Psoriasis. W. H. Goeckerman.—p. 215.
Some Forms of "Sciatic" Pain: Their Diagnosis and Treatment. G. L. K. Pringle.—p. 218.
Treatment of Expectant Mothers by Ultraviolet Irradiation. N. K. Gibbs.—p. 220.
Some Aspects of Climatology and Their Bearing on Rheumatic Disease. C. Buckley.—p. 221.
The Nauheim Treatment in Cardiovascular Disease in England. K. Playfair.—p. 225.

Radiation in Treatment of Psoriasis.—Goeckerman believes that the symptomatic treatment of psoriasis by the use of crude coal tar and ultraviolet irradiation is the most effective method of treatment. It is probable that the superior results are effected by substances produced by photochemical changes in the tar. Removing the psoriatic patches by this method has had a striking symptomatic effect on an associated arthritis in about 50 per cent of the cases treated. Exfoliative dermatitis secondary to psoriasis responds as well to this method of treatment as typical psoriasis. This complication usually develops as the result of intercurrent infection, arsenic preparations internally, or irritants locally. The results of treatment by tar and ultraviolet irradiation do not warrant the assumption that the skin has undergone a form of degeneration in this form of exfoliative dermatitis. Under hospital conditions, an ointment containing from 1 to 5 per cent of crude coal tar is applied about one-eight inch (3 mm.) thick to the various patches, whether large or small. The ointment used by the author consists of an incorporation of the proper percentage of crude tar in about the equivalent of Lassar's paste without salicylic acid. The ointment remains in contact with the patches until the next day. The excess of ointment is then removed with olive oil; a thin film, enough to look like a

brown stain, is purposely allowed to remain. These patches are then exposed to quartz lamp radiation, beginning with a small dose to avoid any reaction. The ointment is reapplied and the exposure given daily. As the patient becomes accustomed to the exposure, the dosage may be rapidly increased. Gradual tanning is the object desired. Following daily exposure to the light, the patient may take a soap and water, or, if his skin is sensitive, an oatmeal and soda bath. He is then permitted to spend several hours in comfort, before the procedure is repeated. Mild conditions clear up in from two to three weeks.

British Medical Journal, London

1: 443-498 (March 18) 1933

Source of Modern Medicine. A. MacPhail.—p. 443.
Treatment of Burns and Scalds, with Especial Reference to Use of Tannic Acid. P. H. Mitchiner.—p. 447.
Recent Conceptions of Bright's Disease and Its Treatment. W. MacAdam.—p. 452.
Primary Pneumonia: Two-Year Survey of Cases Treated Nonspecifically. H. Joules.—p. 455.
Treatment of New Growths by Fluorescein and Roentgen Rays. H. A. Colwell.—p. 457.

1: 499-548 (March 25) 1933

Changes in the Character of Diseases. H. Rolleston.—p. 499.
*Neuroparalytic Accidents Complicating Antirabic Treatment. G. Stuart and K. S. Krikorian.—p. 501.
The Working Capacity of the Consumptive. J. B. McDougall.—p. 504.
Prognosis in Pulmonary Tuberculosis. W. Stobie.—p. 507.
Phthisis in Adolescence and Early Adult Life. W. B. Wood.—p. 509.
Serum Therapy in Poliomyelitis. Jean Macnamara.—p. 526.

Neuroparalytic Accidents in Antirabic Treatment.—Stuart and Krikorian state that paralytic accidents are a rare complication of antirabic treatment but exhibit a certain periodicity in their occurrence. Since 1928 the condition has been observed in Palestine on five occasions: the three patients showing Landry's syndrome died and the two with dorsomyelitis recovered. The incidence is now, for the first time, recorded among members of the age group from 0 to 5 years. The proportion of cases to the number of treated persons varies according to the method of vaccination employed. In this connection, statistics have proved the superiority of phenolized vaccines over all others, but now the safeguards thereby afforded are shown to be far from absolute. The histopathology now described does not agree with that previously published. In the authors' cases the microscopic appearances of the brain and the spinal cord showed little more than varying degrees of degenerative changes in the nerve cells, together with considerable vascular congestion and occasional hemorrhage. Evidence of perivascular demyelination or of perivascular cuffing was altogether wanting, and therefore the type of paralytic accident represented by their cases cannot, on histologic grounds, be included among the group of diseases termed "acute disseminated encephalomyelitis" or "acute perivascular myelinoclasis." Further, the absence of Negri bodies and of perivascular and periganglionic infiltrations differentiates the condition from rabies. The authors again advance a cytotoxin rather than a virus theory of origin. Thus, in the basic nerve substance of all antirabic vaccines there seems to exist some deleterious component which, though adversely affected by various physical and chemical agencies, is still capable, in peculiarly susceptible persons, of producing neuroparalytic disorders.

Edinburgh Medical Journal

40: 113-196 (March) 1933

Bronchial Asthma and Pulmonary Tuberculosis. W. E. Foggie.—p. 113.
Abdominal Glandular Tuberculosis: Study, with Especial Reference to Fecal Fat Content. W. H. Morton.—p. 117.
Results of Examination for Tubercle Bacillus of One Thousand and Five Hundred Samples of Milk in Dundee. W. H. Morton.—p. 124.
Lung Collapse Therapy. H. M. Davies.—p. 127.
Robert Koch's Discovery of Tubercle Bacillus: Some of Its Implications and Results. R. Philip.—p. 146.
Our Progress in Prevention and Treatment of Tuberculosis. G. L. Cox.—p. 158.
Treatment of Tuberculous Disease of Kidney from the Standpoint of the Surgeon. H. Wade.—p. 166.
*Seasonal Variation in Tuberculosis, as Illustrated by Study of Pus Formation in Tuberculous Glands. J. C. Simpson and C. Clayson.—p. 176.
Orientation of Medical Education. A. Miles.—p. 183.

Tuberculosis and Tuberculous Glands.—From a series of 221 patients, divided into twelve groups according to the month of the year in which pus was evacuated, Simpson and Clayson observed that there is a strongly marked tendency to the seasonal occurrence of pus formation in tuberculous lesions, as exemplified by a study of glandular tuberculosis. The maximum tendency to pus formation is in the month of March, while the minimum is in August, September and October. This seasonal variation is as strongly marked—if not more so—in the recurrences of the disease as it is in the initial change from caseation to pus formation. There is no appreciable difference between the tendency to pus formation, observable in patients treated at a sanatorium, and that noted in patients residing at home and treated at outpatient clinics.

Indian Medical Gazette, Calcutta

68: 125-184 (March) 1933

Making Epidemic Forecasts. L. Rogers.—p. 125.
Malignant Disease in the Punjab. V. Nath, J. Lall and J. Singh.—p. 127.
Note on Use of Marmite in Tropical Macrocytic Anemia, Including Pernicious Anemia of Pregnancy. Lucy Wills.—p. 133.
Intensive Iron Treatment of Anemia in a Tea-Garden Labor Force. R. Bhattacharyya.—p. 134.
Note on Prevalence of Lead Poisoning in India. R. H. Candy.—p. 136.
New Corneal Scraper for Tattooing. J. Hansraj.—p. 137.
Fatal Flexner Bacillus Infection in Anthropoid Ape (Hylobates Hoolock). B. M. Das Gupta.—p. 138.
*Urobilinuria and Its Importance in Malaria. J. Lall and J. Singh.—p. 139.
Life Tables for Bengal: Notes on Method of Preparation of Life Tables. H. P. Chaudhuri.—p. 141.

Urobilinuria and Malaria.—Lall and Singh point out that the four important conditions in the tropics in which urobilin is present in large amount are, in the order of their importance, malarial fever, lobar pneumonia in the resolution stage, internal hemorrhage, and cholecystitis. The presence of a large amount of urobilin in the urine differentiates cholecystitis from kidney lesions, appendicitis and other abdominal conditions. The condition in which urobilin is present in the largest amounts is malarial infection. In the 296 cases in which specimens of urine were received along with blood films, malarial parasites and urobilin were present in 85; malarial parasites were present but urobilin was absent in 11; no malarial parasites were observed but urobilin was present in 40, and no urobilin or malarial parasites were found in 160. In the forty patients in whom no malarial parasites were found but the urine was strongly positive for urobilin, quinine was given in curative doses for the fever and in all such cases the fever yielded to the drug.

Irish Journal of Medical Science, Dublin

No. **87:** 97-144 (March) 1933

In the Days of Vesalius. W. Doolin.—p. 97.
Modern Developments in Cataract Extraction. M. H. Whiting.—p. 111.
Notes on Hemophilia, with Recent Experiments on Clotting Time and Their Influence on Treatment. E. T. Freeman.—p. 122.
Some Notes on Uremia. G. Bewley.—p. 129.

Journal Obst. and Gynec. of Brit. Empire, Manchester

40: 209-396 (April) 1933

*Aid in Treatment of Toxemia of Pregnancy. A. Daly.—p. 209.
Influence of Pituitary Gland on Parturition. S. Morris.—p. 230.
Prolonged First Stage of Labor. R. C. Brown.—p. 240.
Consideration of Treatment of Pregnancy Complicated by Cardiac Disease. H. R. MacLennan.—p. 251.
Pathology of Ovarian Tumors. W. Shaw.—p. 257.
*Value of Limited Bacteriologic Control in Prophylaxis of Puerperal Sepsis. Joan K. Rose.—p. 273.
Excretion of Sodium Thiosulphate During Uncomplicated Human Pregnancy, Following its Intravenous Administration in Large Amount. A. Bolliger and M. S. S. Earlam.—p. 289.
*Tuberculous Infection of Uterine Endometrioma. Clara Stewart.—p. 299.
*Traumatic Purpura Occurring During Labor. Jane B. Stubbs and H. E. Martin.—p. 302.

Treatment of Toxemia of Pregnancy.—In treating toxemias of pregnancy, it has been Daly's object to raise the plasma bicarbonate, to increase the calcium content of the serum, and also, in the severe cases, to obtain a relatively rapid action by the intravenous introduction of a suitable diuretic. In all cases of albuminuria, preeclamptic, severe and mild, he administers an alkaline compound tablet orally three times a day. The tablet is composed of 40 grains (2.6 Gm.) of potassium citrate, 20 grains (1.3 Gm.) of sodium bicarbonate, and 7½ grains (0.5 Gm.) of calcium sodium lactate. In cases of severe albuminuria, in addition to the oral administration of the tablet, the author administers intravenously one ampule of 20 cc. of a sterile aqueous solution of 20 grains (1.3 Gm.) of sodium bicarbonate and 20 grains of the diuretic sodium

acetate, and one ampule containing 5½ grains (0.37 Gm.) of anhydrous calcium acetate, 1 minim (0.06 cc.) of glacial acetic acid and enough sterile distilled water to make 2 cc. For intravenous administration the contents of the alkali ampule are added to about 140 cc. of sterile water, the 2 cc. of the calcium ampule is then added and the volume made up to 170 cc. with sterile water, the resulting isotonic solution being introduced by the funnel and tube. The effect of this treatment has been dramatic in many instances. The albumin reading falls rapidly in all cases and is almost invariably small by the third or fourth day; in many cases the urine is clear, and remains clear. If the albumin in the urine rises again, as may occur in the more severe cases, another intravenous injection of the alkali in dilution, followed by the calcium salt, is indicated. The author concludes that his treatment has the advantage over other methods in that the patients are allowed an ordinary diet, thus conserving their energies until the termination of the pregnancy. The treatment also has the advantage that the loss of child life is greatly diminished, for his investigations show that only 2 per cent of cases required induction, whereas, in the control series treated on the usual lines, labor was induced in 66 per cent of patients because of failure to respond to the treatment. The total number of cases in the control series was 131. In addition, only 11 per cent of births were premature, whereas 63 per cent in the control series terminated prematurely.

Bacteriologic Control in Puerperal Sepsis.—Rose states that a study of the various groups of cases shows that there is an increased morbidity rate for all groups having hemolytic streptococci in the fauces or vagina during the lying-in period. In throat infections, the increase is due chiefly to diseases of the respiratory system and to mastitis. In vaginal cases, morbidity is usually of genital origin. Hemolytic streptococci may in some cases be normal inhabitants of the lower vagina in the pregnant woman, but when they are present during the last month they should be regarded as a potential danger. Hemolytic streptococci were found in the genital passages in 6.8 per cent of hospital patients and in 9.6 per cent of district patients. Streptococcic infection giving rise to pyrexia occurred in 0.6 per cent of hospital cases and in 1.4 per cent of district cases. A knowledge of the bacteriology of the genital tract, especially during the last month of pregnancy and in the early days of the puerperium, is of value, as special precautions may be adopted if pathogenic organisms are present. Preventive measures should include treatment of positive fauces in patients and attendants, treatment of positive vaginas during the late antenatal period and throughout labor, also all measures that can be devised for protecting the patient from contact with acute or subacute infection at home or in the hospital. The technic of the obstetric attendant should be adequate to prevent the risk of contagion from all sources, including droplet infection. Owing to the bacteriologic examination, it has been possible to reduce the risk of puerperal infection in 3,000 consecutive cases by 75 per cent. Pyrexia due to Streptococcus hemolyticus has not entirely disappeared, but there have been few severe cases and, when isolated cases have occurred, there has been no spread of infection. It would appear, therefore, that the risk of contagion which is commonly associated with the congregation of patients in institutions has in the past three years been practically eliminated.

Tuberculous Infection of Uterine Endometrioma.—Stewart reports a case of tuberculosis in association with endometriosis uteri. The case is of particular interest in that there was a discrete nodule of adenomyoma as well as a general diffuse endometriosis, and that the two lesions were the site of active tuberculosis. The adnexa were not examined microscopically. Only those of one side were removed at the operation and they appeared to be normal on macroscopic examination, while the tuberculous lesion of the uterus was unsuspected until the specimen had been submitted to microscopic examination. In the clinical history there was no indication of the time of infection. As often happens, the symptoms had apparently no reference to the tuberculosis. Pain associated with and between menstruation was the only symptom so far as the patient could recall.

Traumatic Purpura.—Stubbs and Martin observed a case of traumatic purpura occurring during parturition, in which the systolic and diastolic blood pressures were 100 and 65 mm. of mercury, respectively. The blood count was as follows: red cells 3,568,000, white cells 7,000, hemoglobin 55 per cent, color index 0.75, polymorphonuclear leukocytes 70 per cent, lymphocytes 25 per cent, large mononuclears 3 per cent, eosinophils 1 per cent, and mast cells 1 per cent. The blood platelets were plentiful. The bleeding time estimated by Duke's method was four minutes. The blood coagulation time was not increased. The authors believe that their case differs markedly from those of purpura in pregnancy previously reported. Except for some hyperemesis occurring early, the pregnancy, labor and puerperium were normal, and a healthy child was obtained. The eruption was unaccompanied by any disturbance of the patient's general health and occurred during labor. The rash was distributed over the upper part of the body, which is unusual. The peculiarities which might predispose to traumatic purpura are that the prolonged bleeding time and the history of purpuric spots occurring during the hyperemesis of a previous pregnancy suggest that the patient had a hemorrhagic diathesis; the long standing mitral stenosis would tend to increase the intravenous and intracapillary pressure, and the large doses of potassium citrate that had been administered for four months prior to the labor might influence the coagulability of the blood.

Journal of Physiology, London

77: 319-458 (March 15) 1933

Central and Reflex Mechanism of Panting. M. Hammouda.—p. 319.
Lapicque's Theory of Curarization. W. A. H. Rushton.—p. 337.
Effect of Insulin on Respiratory Quotient, Oxygen Consumption, Sugar Utilization and Glycogen Synthesis in Normal Mammalian Heart in Hyperglycemia and Hypoglycemia. E. W. H. Cruickshank and C. W. Startup.—p. 365.
Excretion of Protein by Mammalian Kidney. L. E. Bayliss, Phyllis M. Tookey Kerridge and Dorothy S. Russell.—p. 386.
Portal Circulation: II. Action of Acetylcholine. J. McMichael.—p. 399.
Nervous Control of Caudal Region of Large Bowel in Cat. R. C. Garry.—p. 422.
Influence of Oxygen Pressure on Metabolism of Isolated Cold-Blooded Heart. A. J. Clark, R. Gaddie and C. P. Stewart.—p. 432.
Gastric Fibers of Vagus Nerve. B. A. McSwiney and W. R. Spurrell.—p. 447.

Journal of Tropical Medicine and Hygiene, London

36: 65-80 (March 1) 1933

*Bacterium Dispar (Andrewes) and Its Association with Dysentery. W. L. Forsyth.—p. 65.
Metadysentery Observed in Erithrea: Cases. A. Marmo.—p. 69.

Bacterium Dispar and Dysentery.—In the past two years, Forsyth succeeded in collecting and investigating twenty-one strains of Bacillus dispar isolated from the intestinal tract in cases of clinical dysentery. The author fed rabbits with this organism without their showing evidence of infection. Young, recently isolated strains have been introduced by rubber catheter in the rectum of rabbits without any harmful result to the animals. A monkey (Macacus rhesus) was fed each morning on vegetable impregnated with young broth culture and on sugar soaked in the culture, before other food was allowed. This was continued for a fortnight without signs of enteritis intervening. The stools of the animal were sown on three occasions on MacConkey's medium and yielded large crops of colonies of Bacillus dispar. A laboratory attendant indulged in some of the vegetable soaked in culture without further incident. It has proved a good antigen on injection into a patient for the clinical purposes of protein shock. The author states that some observers have, by parenteral, usually intravenous, introduction of living culture, shown selective inflammation of the mucosa of the large intestine in the rabbit. It will be admitted by those who have had considerable experience of this maneuver that enteritis does not always follow the injection of what is undoubtedly a living dysentery antigen. It is not rare to find the ureters of the animal ballooned with blood produced by an acute hemorrhagic nephritis. However, certain strains of Flexner's bacillus may, in small doses, produce on occasion enterotropism of the large intestine, as evidenced by the accumulation of blood and mucus therein and the presence of small ulcers or areas of hemorrhage. In regard to Bacillus dispar, the author has not been able to produce evidence of inflammation of the lower intestine in the rabbit. Doses of from one twelfth to one half of an agar slope in saline solution have been injected into the ear vein of a rabbit, resulting in the death of the animal at periods varying with the dose, one sixth of a slope killing the rabbit in forty-eight hours. Postmortem examination discloses

the first 5 cm. of the duodenum acutely inflamed and hemorrhagic, the contents being bile-stained bloody mucus, serous effusion in the peritoneal cavity, and pure culture of the organism recoverable from the heart blood, gallbladder and upper part of the small intestine. The organism does not produce a soluble exotoxin, as shown by the intravenous injection of 5 cc. of a twelve hour growth, drawn through a Seitz filter, in a rabbit that did not eat for twenty-four hours but was alive at the end of a month. The author concludes that Bacterium dispar (Andrewes) would appear to belong to the larger group of organisms described as Bacillus coli-anaerogenes. The dispar group is serologically heterogenous, and, as a group, distinct from the bacillus variously known as Sonne's bacillus, or Bacillus ceylonensis A, or Bacillus kruse-castellanii. It is probably a commensal which becomes a concomitant when the normal flora of the blood is disturbed by the entry of an intestinal pathogen. It cannot be accepted as a dysenterogenic organism until further serologic evidence is obtained from the study of many strains.

Lancet, London

1: 563-620 (March 18) 1933

Pneumococcic Infections. R. Cruickshank.—p. 563.
Epidemiology Applied to School Life. J. A. H. Brincker.—p. 569.
*Actinomycosis. R. Bates.—p. 571.
Grass Pollen Antigen for Hay Fever Desensitization. J. Freeman.—p. 573.
*Some Aspects of Pathology of Pyemic Conditions: Based on Study of Four Cases of Severe Acute Osteomyelitis Treated with Benzene. T. H. C. Benians.—p. 574.
*Magnesium Sulphate in Treatment of Angiospasm. N. Pines.—p. 577.

Actinomycosis.—Bates presents an analysis of twenty-nine consecutive cases of actinomycosis seen in the London Hospital over a period of five and a half years. In every case the presence of the streptothrix was verified by the bacteriologic examination of pus obtained at operation or at necropsy. In his series none of the patients were under the age of 10, twenty-one were under the age of 40, and seven of these were under the age of 20. Clinically, the infections may be divided into two main groups: the superficial group, which includes the cervicofacial variety and subcutaneous infections of the limbs; and the deep group, which includes the thoracic and abdominal cases. In the first group the infection does not endanger life, but in the second it only too frequently proves fatal. The author concludes that human actinomycosis appears to be invariably an infection with the non-acid-fast anaerobic streptothrix Actinomyces bovis. The superficial variety of actinomycosis occurs more commonly than is usually supposed. In cervicofacial cases, before the formation of pus, trismus is the most important sign. Early diagnosis by a bacteriologic examination of pus in all cases of alveolar abscess, and early treatment with iodides will prevent the terrible scarring and repeated relapses associated with the disease. If a test tube containing actinomycotic pus is tilted, the granules are visible to the naked eye as greenish gray specks adhering to the glass. When a routine bacteriologic examination of all pus is impossible, this method of tilting the test tube and examination through a hand lens would indicate the more suggestive cases which need fuller investigation. In the deep variety there is such a high mortality that a routine bacteriologic examination of the pus in cases of empyema, appendicular abscess and subdiaphragmatic abscess is imperative. When the disease is suggested by its chronicity, it has usually spread beyond human aid. In both types of the disease adequate drainage, with the resulting increase in oxygen tension of the part affected, and massive dosage with iodides appear to give the best results. Prognosis depends on the anatomic site of the lesion and early recognition of the disease.

Pyemic Conditions and Acute Osteomyelitis.—Benians treated with benzene four cases of acute osteomyelitis presenting septicopyemia, with the object of diminishing the leukocytic reaction. In three of them there was a marked fall in the white cell count, and in the fourth a profound leukopenia set in. The purulent discharge diminished and became more watery. The patients all recovered and no after-effects due to the benzene have been noted. The most recent of the cases quoted was two years ago. There was an artificial restriction of the output of leukocytes in the later stages of the disease, and the author claims that this was an advantage rather than a disadvantage. In each of his patients an opening in the bone had been made and drainage established. After the operation, as soon as the blood count was found to be actively rising, the patients were given 10 minims (0.6 cc.) of benzene by mouth two or three times a day or, for the younger children, 5 minims (0.3 cc.) three times a day, according to the degree of the white cell count and the amount of red blood available, for this may in time also be affected. The drug is given in capsules or in milk. The progress of the white cell count was followed every few days, and when the count had fallen to about 10,000 the drug was discontinued. The fall may continue after the drug has been stopped; consequently, when the administration has been continued for some time, it should be stopped while the count, though falling, is still relatively high; i. e., from 12,000 to 15,000.

Magnesium Sulphate in Angiospasm.—Pines has obtained good results in many cases of angiospasm treated with magnesium sulphate. His method is as follows: With the patient lying on a couch with the head and shoulders slightly raised, a solution of magnesium sulphate and dextrose is slowly injected into the vein. The dose is from 5 to 10 cc. of a 20 per cent solution and an equal volume of from 10 to 40 per cent dextrose. About half a minute after the commencement of the injection the patient feels an intense heat in the body. This is first experienced at the back of the pharynx, then in the face and neck, then in the thorax, and sometimes in the upper limbs, and it proceeds down to the rectum and genitalia, the lower limbs being the last to react. The face is sometimes intensely flushed and may even perspire; the skin of the limbs and body hardly alter in color or temperature. The pulse becomes moderately quickened. The blood pressure is unaltered. On ophthalmoscopic examination, the retinal vessels show no change. In the author's opinion the magnesium sulphate probably relaxes vascular spasm by direct action on the vasomotor center of the brain. If it acted directly on the arterial wall there would not be the constant sensation of heat. The more spastic or the more clogged the vessel, the less is the sensation of heat and the less effective is the injection. The patient can tell exactly where the sensation of heat ceases, and the author has found that the oscillometric index invariably corresponds to the patient's sensations. If the intravenous mode of injection is for some reason impracticable, the solution of magnesium sulphate without dextrose is well tolerated intramuscularly, but the intravenous route is the one recommended. He did not observe any discomfort in any of his patients, although several of them were more than 60 years of age, and he thinks that the alarming signs of respiratory distress that have been seen in the cases of tetanus treated with magnesium sulphate may be explained as due either to the intrathecal method of injection or to excessive dosage. He usually administers the treatment to his patients twice a week.

South African Medical Journal, Cape Town

7: 169-204 (March 25) 1933

Autosuggestion and Hypnosis in General Practice. H. V. Exner.—p. 171.
Pituitary Tumor. J. C. G. MacNab.—p. 176.
Pharmacologic Actions of Urginea Altissima (L. Fil.), Baker. D. Epstein.—p. 180.
Medical Association in Northern Transvaal. L. S. Robertson.—p. 183.

Tubercle, London

14: 241-288 (March) 1933

*Complications of Artificial Pneumothorax: Their Prevention and Treatment. A. G. J. Harris.—p. 241.
Pulmonary Tuberculosis Complicating Glandular Tuberculosis: Notes on Fifty-Eight Cases. W. M. Cumming.—p. 259.
Some Clinical Types of Tuberculosis. L. S. T. Burrell.—p. 263.

Complications of Artificial Pneumothorax.—Harris classifies and discusses the various complications of artificial pneumothorax under the following headings: (1) accidents occurring during the process of induction or during a refill, (2) complications occurring usually after the induction, (3) cardiac complications, (4) complications in the opposite lung, (5) tuberculous disease in other organs and (6) complications from general diseases. He concludes that the complications of artificial pneumothorax are numerous; some are rare and should not occur if sufficient care is taken; others, such as serous effusions, are common and their occurrence is difficult to prevent. The type of gas used is immaterial; carbon dioxide

is most rapidly absorbed, but air filtered through wool is generally the choice. Full anesthetization of the subcutaneous tissues and pleura should be carried out on every patient and before every refill. High intrapleural pressures are best avoided. The correct spacing of refills is important, as is control by roentgen examinations. Effusions occur in at least 50 per cent of cases, and amounts demonstrable only by roentgen rays occur in 100 per cent of cases. Various methods of dealing with the large and purulent effusions are in vogue, but a really satisfactory treatment has yet to be devised. Hemoptysis is sometimes increased by artificial pneumothorax. Tuberculous disease occurring elsewhere in the body and the presence of any other serious disease, such as diabetes, seriously complicate the case. Artificial pneumothorax, safely used, is of definite therapeutic value in properly selected cases. In cases not suitable for this form of treatment, complications are more liable to occur.

Gynécologie et Obstétrique, Paris

27: 385-480 (May 5) 1933

Fibromuscular Formations of Human Placenta and Their Rôle in Placental Circulation. G. Dubreuil and M. Rivière.—p. 385.
*Value of Chemical Sympathectomy in Gynecology. A. Binet.—p. 393.
*Evaluation of Retrograde Ovular Function and Quantity of Amniotic Fluid in Pregnant Women. G. Albano.—p. 416.
Extended Indications and Results of Uterine Revision Immediately After Delivery. R. Keller and E. Bohler.—p. 425.
Dressing and Section of Umbilical Cord. P. Gousikoff.—p. 445.

Chemical Sympathectomy in Gynecology.—Binet states that chemical sympathectomy in its gynecologic applications is an easier and more rapid operation than surgical sympathectomy. By this method the sympathetic can be easily reached at the level of the superior hypogastric plexus innervating the uterus and the ovarian plexus innervating the ovaries, thereby permitting a complete action on the genital tract, which is desired in most cases. The author uses a 6 per cent solution of tricresol as the chemical agent. It is innocuous for the tissues, is nontoxic and has a selective action on the sympathetic fibers. He employs two methods: one consists of applying tampons with tricresol solution to the nerve plexus after incision of the peritoneum, and the other consists in subperitoneal injection of the tricresol solution. After laparotomy, an injection of not more than 20 cc. of the tricresol solution is made under the posterior parietal peritoneum in the region of the promontory. Care must be taken not to pierce a vein. Similar injections of not more than 15 cc. are made in the region of the mesovarium and, if necessary, the broad ligaments. Chemical sympathectomy, like the surgical method, is indicated in disturbances of the vagosympathetic equilibrium. The principal indication for it in gynecology is pain. If pain is linked with an organic lesion, chemical sympathectomy may be used to supplement the causal therapy which does not always stop the pain, as in ventrosuspension, and in painful syndromes without distinct macroscopic substratum it often attains remarkable results. The immediate results obtained by the author were always favorable, but it is too early to discuss the late results as his experiences cover less than two years.

Quantity of Amniotic Fluid.—By retrograde ovular functions Albano means the power of the ovum to expel from its cavity waste matters and substances useless to the function of the amniotic fluid. An easy and clinically exact method for the study of this function consists in the intra-ovular injection of 0.006 Gm. of phenolsulphonphthalein sodium and the control of its appearance in the urine, the duration of its elimination, the quantity eliminated and the time of its disappearance from the amniotic cavity. The injection is made by transabdominal puncture with a needle 10 or 12 cm. long. The needle, provided with a stylet to prevent the entrance of blood into the lumen, is inserted in the hypogastrium immediately above the fetal chin. To prevent piercing the bladder it should be voided before the injection. An assistant holds the fundus of the uterus to fix it against the abdominal wall. The phenolsulphonphthalein is diluted with the amniotic fluid, to assure its rapid diffusion through the cavity. The patient alternates from left to right lateral decubitus every five minutes for twenty minutes and then walks for ten minutes, after which an indwelling catheter is introduced for detection of the appearance of dye in the urine. The amount of amniotic fluid present can be calculated after dilution of the phenolsulphonphthalein and before its resorption. The first appearance of dye in the urine of the pregnant woman occurs normally between forty-five and seventy-five minutes after the injection. The amount of phenolsulphonphthalein eliminated in the first twenty-four hours (determined colorimetrically) is about 30 per cent. Elimination of the dye in traces continues for from seventy to eighty hours. After twenty-four hours the residue of dye in the amniotic cavity is about 30 per cent, and after forty-eight hours only traces of it are found. In diseases having a repercussion on the ovum there is a deviation from the normal excretory cycle. In noncompensated cardiopathies the appearance of the dye is retarded and its elimination is prolonged; this is also true in women with toxemia. In pulmonary tuberculosis the cycle of elimination is shortened. In case of death of the fetus the elimination is prolonged for days. The ovular function can be easily studied in the maternofetal sense by determining what percentage of 2 Gm. of potassium iodide injected intravenously into the pregnant woman has passed into the amniotic fluid one hour later. The mechanism of resorption (not excluding the deglutition of the fetus) must reside essentially in the passage through the wall of the ovum and especially through the extraplacental chorial and amniotic surface.

Paris Médical

1: 465-476 (May 27) 1933

Syphilitic Aortitis. R. Poinso.—p. 465.
*Electrical Treatment of Cavernous Angiomas: Electrolysis or Diathermy. H. Bordier.—p. 469.
Treatment of Hypertrophy of Tonsils by Diathermy Without Coagulation. T. Atkinson.—p. 473.
Treatment of Hypertrophy of Nasal Conchas by Noncoagulating Diathermy. H.-L. Sinskey.—p. 474.

Electrical Treatment of Cavernous Angiomas.—Bordier prefers diathermy to electrolysis for the treatment of cavernous angiomas which are covered by normal skin, because coagulation is obtained more quickly and fewer treatments are required; it is also less painful. He employs chiefly the bipolar method. In this method both needles are introduced into the tumor and the current is localized in the tumor itself. The coagulation occurs not only around the needle but in the interpolar space. He uses a bipolar diathermic fork in which the distance between the prongs can be varied according to the size of the tumor and which possesses two sets of insulated needles, one large and one small, to be fitted into the insulated handle. The needles are insulated all the way down to the point, as it is of the utmost importance not to coagulate the healthy skin covering the angioma. The fork is so introduced that the largest part of the tumor is situated between the two needles. The strength of the current varies in each case: the greater the distance between the needles, the more current is required. Coagulation is obtained in several seconds. When the volume of the clot is sufficient, the current is stopped and the fork withdrawn. This intervention does not require anesthesia. One coagulation sometimes suffices, but usually two are necessary to reduce the tumor completely. If a small elevation remains after coagulation, it can be coagulated by the monopolar method. With this technic the mark made by the needles is almost invisible.

Presse Médicale, Paris

41: 833-856 (May 24) 1933

Intolerance and Gestation. Lévy-Solal and J. de Pariente.—p. 833.
*Ventriculography: Technic, Results, Indications. T. de Martel, J. Guillaume and J. Panet-Raymond.—p. 834.
Value of Mechanical Study of Lung in Phthisiology. F. Dumarest and P. Lefèvre.—p. 839.

Ventriculography.—Martel and his associates have performed 300 ventriculographies in the last three years with only four deaths. Two of these occurred prior to the perfecting of their present technic and two occurred in patients so ill that death could not be attributed, with certainty, to the ventriculography. Frequently the ventriculography permitted precise localization of the tumor and even the determination of its size. In less satisfactory cases it permitted differentiation between a cerebral tumor and a cerebellar tumor and, when a cerebral tumor was concerned, the hemisphere in which it was located could be determined. In several cases it ruled out the diagnosis of brain tumor and spared the patient a useless trepanation. Ventriculography is indicated in all cases of

suspected brain tumor in which the clinical examination is not sufficient to affirm the existence of a cerebral tumor or permit an accurate localization of the tumor.

41: 905-920 (June 7) 1933

Emotion as Factor in Disturbance of Humoral Equilibrium. E. Joltrain.—p. 905.
Latent Cancer of Pharynx. P.-C. Huet.—p. 908.
*Trigeminocardiopulmonary Reflex. P. Caryophyllis.—p. 909.

Red Spots on Cheeks of Tuberculous Patients.—Caryophyllis says that the red spots which appear on the cheeks of some patients with pulmonary tuberculosis on the side corresponding to the lesion are observed only in patients with extensive lesions and are due to a trigeminocardiopulmonary reflex. The pulmonary lesion by irritation of the centripetal neurosympathetic fibers of the lungs determines a reflex irritation of the centrifugal fibers which, if strong enough, manifests itself in a vasodilatation of the cheek homolateral to the diseased lung or, if not strong enough, causes a latent disturbance of the sympathetic tonus. In such cases, the author found that the application of hot water bottles to the cheeks by provoking an irritation of the sympathetic ganglion cells of the external tunic of the vessels causes a greater vasodilatation on the side of the latent neurosympathetic disturbance. The reflex is useful for determining on which side a unilateral pulmonary lesion or the more extensive of a bilateral lesion is located. Besides the local response there is a general response manifesting itself in an acceleration of the pulse and an increase of the arterial tension when the reaction is sympathicotonic. Investigation of a large number of patients with a neurosympathetic dystonia showed that the reaction was always parasympathicotonic in patients clinically parasympathicotonic and that the opposite reaction occurred in patients clinically sympathicotonic. A study of the trigeminocardiopulmonary reflex is therefore valuable for the study of the sympathetic nervous tonus. Certain rules must be observed in studying the reflex. The patient must be in dorsal decubitus fifteen minutes before the examination. The room must not be overheated. The water containers must be of equal size and weight and filled with equal quantities of water of the same temperature. They must be applied and removed at the same time. They should occupy the same place on the cheek, preferably the entire cheek. The patient should be warned in advance not to rub his cheek. The reflex should be studied only by daylight. If the patient is a man, his cheek should be well shaved.

Schweizerische medizinische Wochenschrift, Basel

63: 529-560 (June 3) 1933

*Significance of Calcium Metabolism for Rickets and Caries. E. Rothlin.—p. 529.
Development Mechanism as Therapeutic Principle in Orthopedics. H. Iselin.—p. 536.
Cholecystogastrostomy. A. Jentzer.—p. 542.
*Arsphenamine Panmyelophthisis. O. Merkelbach.—p. 546.
Oral Digitalis Therapy. C. Rohrer.—p. 548.
Pneumonic Lesion as Basis of Pulmonary Tuberculosis. I. Fischer.—p. 550.

Calcium Metabolism in Rickets and Caries.—On the basis of experimental and clinical studies on calcium metabolism and its significance for rickets and dental caries, Rothlin reaches the following conclusions: 1. The calcium metabolism and its regulation by the parathyroids and by vitamin D is the physiologic foundation for the normal development of bones and teeth. 2. The pathologic changes in bones and teeth, rickets and caries, are caused by the same disturbances in the calcium metabolism, particularly by a deficiency of calcium, phosphorus and vitamin D, by a dysfunction of the parathyroids and by giving children a diet rich in cereals. 3. To obtain a physiologically homogenous calcification of the deciduous and of the permanent teeth, as well as their regular spacing in well developed bones, a suitable dietetic prophylaxis is necessary. This prophylaxis should begin at the time of beginning calcification of the bones and of the teeth, that is, in the mother, during the time of gestation and lactation, and it must be continued in the growing child. Inadequate diet of the woman during pregnancy and lactation creates a predisposition for rickets and caries, and a deficient diet in the growing child leads to their manifestation. 4. Rickets as well as caries can be therapeutically influenced by a suitable diet; rickets can be completely cured, active caries can be checked, and the resistance against external chemical and bacterial influences that are contributing causes of caries can be increased.

Arsphenamine Panmyelophthisis.—Merkelbach gives the clinical history of a woman who, in the course of antisyphilitic therapy, showed hypersusceptibility to arsphenamine. In spite of this, further antisyphilitic treatment was possible fifteen months later, but five months after the conclusion of this treatment the patient required treatment for anemia. The author points out that blood diseases developing as sequelae of arsphenamine therapy generally become manifest immediately or shortly after the injections, and he therefore considers the latent period of five months worthy of note. He gives a tabular report indicating the blood status at the time treatment was begun and its gradual improvement under the influence of blood transfusions and other therapeutic measures. With the exception of a slight eosinophilia and a rather severe thrombopenia the blood status is now almost normal, but at the beginning of treatment the hemoglobin content and the form elements were greatly reduced. Whether the present status is only a remission or a complete cure cannot be decided as yet. The author considers the reported case as a connecting link between the fatally ending and the mild forms of toxic injury of the bone marrow. The impairment may involve only a partial function or all functions of the bone marrow. The fact that, one year after the beginning of the symptoms of anemia and more than eighteen months after the last arsphenamine injection, there still existed a thrombopenia seems to prove that arsenic preparations may cause myelotoxicoses of varying severity but also that there is a gradual transition between thrombopenia, thrombopenic anemia, agranulocytosis and panmyelophthisis. The sensitive megakaryocytes, however, are damaged first, most severely and longest.

Archivo de Medicina, Cirugia y Espec., Madrid

36: 589-616 (May 27) 1933

Indications, Technic and Results of Gastrectomy. T. Hernando, L. Serrada and A. Catalina.—p. 589.
*Action of Cardiac Hormones on Lactic Acid and Dextrose Content in Blood. J. A. Collazo, J. Puyal and Isabel Torres.—p. 599.

Action of Cardiac Hormones.—Collazo and his collaborators state that the action of organic extracts on the mechanism of circulation is due to their content in cardiac hormones. Cardiac hormones may be divided into true cardiac hormones and arterial hormones. True cardiac hormones have a cardiac, muscular or visceral origin. Their active principle is adenylic-phosphoric acid. Arterial hormones are of pancreatic origin. Their active principle is still unknown, although it is believed that it is also adenylic-phosphoric acid. In order to ascertain the significance of adenylic-phosphoric acid in muscular metabolism, the authors first determined the normal glycemia and the normal content of lactic acid of the blood of two groups of normal rabbits. Then the animals of one group received an injection of 1 cc. per kilogram of body weight of a cardiokinetic muscular extract, while those of the other group received the same dose of a pancreatic extract. The glycemia and the content of lactic acid in the blood of the animals were then determined at various intervals. The authors conclude that only the hormone contained in the muscular extract may be identified with adenylic-phosphoric acid. This hormone acts on the neuromuscular system, bringing about a dilatation of the coronary and peripheral vessels. It had a constant action on the lactic acid content of the blood, which decreased from 31 mg. per hundred cubic centimeters of blood before the injection to 26, 24 and 27 mg. per hundred cubic centimeters of blood, 30, 60 and 120 minutes, respectively, after the injection. Glycemia increased from 94 mg. per hundred cubic centimeters of blood before the injection to 95, 101 and 97 mg. per hundred cubic centimeters of blood in the same periods. The action of the pancreatic hormone deprived of insulin on glycemia and on the lactic acid content of the blood is less marked than that of the hormones contained in the muscular extracts, either because its active principle is a specific hormone and not adenylic-phosphoric acid, or because its content of adenylic-phosphoric acid is not equal to that of the muscular extracts. In the majority of the cases, the lactic acid content of the blood showed oscillations from 28 mg. of lactic acid per hundred cubic centimeters of blood before the injection to 30, 27 and 29 mg. per hundred cubic centimeters of blood after 30,

60 and 120 minutes, respectively, after the injection. Glycemia followed the variations with a tendency to a diminution, that is from 85 mg. per hundred cubic centimeters of blood before the injection to 80, 76 and 92 mg. per hundred cubic centimeters of blood in the same periods. The results justify the hypothesis that the action of cardiac hormones is primarily on the metabolism of carbohydrates and phosphorus of the peripheral muscles and of the cardiac muscle and, mostly, in the muscular layers of the vessels, thus favoring the energetic output of the vessels.

Beiträge zur Klinik der Tuberkulose, Berlin

82: 509-654 (April 22) 1933

Early Recognition of Pulmonary Tuberculosis. K. Zech.—p. 509.
Decrease in Tuberculosis Mortality and Relations to General Mortality. E. Fürth.—p. 533.
Knowledge of Lay Persons About Tuberculosis. A. L. Peitmann. —p. 549.
Pathologic Anatomy of Beginning Stages of Reinfection in Pulmonary Tuberculosis. W. H. Stefko.—p. 566.
Total Resection of First Rib. H. Kleesattel.—p. 571.
*Critical Remarks on Spontaneous Pneumothorax as Complication of Simultaneous Bilateral Pneumothorax. A. Pollerbeck.—p. 579.
*Tests of Cardiac Function of Patients with Pulmonary Tuberculosis. E. Witzenrath.—p. 585.
Various Forms of Calcium in Serum in Tuberculosis of Joints and Bones. N. Okuneff and Sophie Wólowa.—p. 597.
*Demonstration of Tubercle Bacillemia According to E. Löwenstein. J. Schramek.—p. 606.
Value of Diagnostic Tebeprotin Reaction in Regard to Degree of Activity and to Prognosis of Pulmonary Tuberculosis. F. Bartelt.—p. 615.
Organic Disturbances and Prognosis in Bronchial Asthma. M. Hamann. —p. 619.
Incidence of Tuberculosis in China. P. D. Kou.—p. 641.

Complication of Simultaneous Bilateral Pneumothorax.—Pollerbeck reports observations on a patient with bilateral pneumothorax in whom the roentgenogram revealed a displacement of the mediastinal organs to the left. A pneumothorax on the left side could not completely offset this displacement. Several hours after the pneumothorax had been induced also on the right side, there developed symptoms that seemed to indicate a spontaneous pneumothorax. However, the slowly progressing development of the condition, the negative pressure in the pneumothorax and the disappearance of the painful symptoms following the withdrawal of some of the air indicated that the disorder was not a spontaneous pneumothorax. The author agrees with Alexander who, in the *Deutsche medizinische Wochenschrift* (**58:**1351 [Aug. 26] 1932; abstr. THE JOURNAL, Nov. 5, 1932, p. 1642), called attention to the significance of the yielding mediastinum, and he thinks that the described disorder was the result of such a mediastinal displacement. The same symptoms developed several months later in the course of a simultaneous bilateral filling, while the refillings in the meantime had remained free from complications. A condition that can be considered a spontaneous pneumothorax developed several weeks later in the course of a unilateral filling.

Tests of Cardiac Function in Pulmonary Tuberculosis.—Witzenrath calls attention to the fact that the extensive use of collapse therapy in patients with pulmonary tuberculosis has given greater importance to the tests for the estimation of the circulatory function, particularly the heart action, because the cardiac function is taxed severely, especially in the course of plastic operations. Since there is no single method that permits an adequate estimate of the function of the heart, the author employed several methods. In addition to the clinical and roentgenologic examination of the heart and of the respiratory conditions, he examined the blood pressure and the pulse, employed Kauffmann's water test, resorted to the photographic registration of the pulse of the jugular vein, which, according to Weber, gives better information about the cardiac function than any other graphic method and, in some of the patients, he also did electrocardiography. The photographic registration of the pulse of the jugular vein in 220 patients with open tuberculosis gave normal results in 2.3 per cent, slight changes in 58.2 per cent, medium changes in 23.6 per cent, and severe changes in 15.9 per cent. In 110 patients with open tuberculosis, the blood pressure and the pulse were taken and photographic registration of the venous pulse and Kauffmann's water test were made, and in twenty-seven cases electrocardiography was done in addition to these tests. The blood pressure was normal in 31.8 per cent of the patients, slightly changed in 48.2 per cent and greatly changed in 20 per cent. The pulse was normal in 13.6 per cent, slightly changed in 65.5 per cent and considerably changed in 20.9 per cent. Photography of the venous pulse gave practically the same results as indicated for the 220 cases. Kauffmann's water test was negative in 85.4 per cent and positive in 14.6 per cent. Electrocardiography revealed abnormal conditions in only one patient. That the simultaneous use of several test methods gives reliable information about the cardiac function became evident in operative interventions on seventy-four patients.

Demonstration of Tubercle Bacillemia.—Schramek reports his observations with Löwenstein's method for the culture of tubercle bacilli from the blood. He found that Löwenstein's culture medium is one of the best. Tests with human, bovine and avian types of tubercle bacilli revealed that the latter type grew best and that the bovine type showed the least favorable growth in this medium. Tubercle bacilli introduced into the blood in vitro are always demonstrable in the culture, but their detection is difficult in the blood sediment. Blood constituents impair growth in the culture: the greater the withdrawal of hemoglobin, the better the growth. Hemolyzation with distilled water is to be preferred to hemolyzation with acetic acid. Artefacts of various types are often present in the smears from the blood sediments and from the blood cultures and, since they readily cause errors, must be differentiated. Only two of 522 blood cultures from 332 patients with pulmonary tuberculosis gave positive results. The microscopic demonstration of tubercle bacilli from the blood sediment smears of these blood tests was never possible. For the certain identification of tubercle bacilli from cultures of the blood, it is not only necessary to produce the characteristic stain in the smear but to prove transferability by inoculation. In patients with extrapulmonary complications, the results of the blood culture were always negative. The author's tests show that the demonstration of tubercle bacilli in the blood is an extremely rare occurrence.

Dermatologische Wochenschrift, Leipzig

96: 705-732 (May 27) 1933

Rôle of Weakening Inflammation Substances in Light Biology and Their Therapeutic Utilization. E. Rajka.—p. 705.
Tic as Result of Muscular Gumma. N. Szenderowicz.—p. 708.
*Functional Changes of Thyroid in Florid Secondary Syphilis Determined by Kottmann Reaction. A. D. Troitzkaja.—p. 709.
*Local Immunization Manifestations in Gonorrhea Cutireaction. C. Engel and H. Grundmann.—p. 716.

Functional Changes of Thyroid in Secondary Syphilis.—Troitzkaja points out that, whereas in gummatous and congenital syphilis the endocrine glands may present gummatous or fibrous processes, secondary syphilis causes only temporary changes that do not lead to anatomic changes but are more of a functional character. Clinical observations often reveal an irritative swelling of the organ, but the functional changes are not so easily recognized. To determine the functional changes the author employed the Kottmann reaction, a photochemical colloid reaction, which indicates the functional activity of the thyroid on the dispersion capacity of the serum. Since women are more subject than are men to disturbances of the thyroid, tests were made on 100 female syphilitic patients, of whom 15 were in the primary stage of syphilis, 50 in the beginning secondary stage, and 35 had relapses. None of the patients had received treatment before the test. The results indicate that the spreading syphilitic infection involves the thyroid and that the impairment usually becomes manifest in a reduction of its functional activity, although its function may be increased in a small percentage of cases. The Kottmann reaction, in revealing the smallest functional changes, also proved that the swelling of the gland generally concurred with hypofunction and not with hyperfunction, as is the case in exophthalmic goiter. This concurrence of the swelling of the thyroid with hypofunction is the result of a temporary inflammation. The syphilitic character of the thyroid changes is proved by the efficacy of the antisyphilitic treatment.

Local Immunization in Gonorrhea Cutireaction.—Formerly reported investigations had proved to Engel and Grundmann that by means of an intracutaneous test with a gonococcus vaccine an existing or a former gonorrhea could be detected in a large percentage of patients. But whereas before they had observed only local reactions following intra-

cutaneous as well as subcutaneous (for therapeutic purposes) injections, they now found that under certain conditions the repeated administration of the gonococcus vaccine may cause a generalized toxic urticaria in which only the area of the first vaccination is spared. The authors think that this manifestation was produced because of the unusual time of reinjection, for in former cases the injections had always been continued immediately after the intracutaneous test, whereas in the reported case two weeks had intervened between the test and the vaccine treatment. They believe that, if the injections are continued, the local reactions become steadily weaker, even after increased doses of antigen, because of a gradually progressing desensitization. The immunity of the site of the primary injection is particularly noteworthy. Experiments in which the reactions following reinjection into the site of the first vaccination were compared with reactions in other areas indicated that the preliminary vaccination had produced such an increase in antibodies that the repeated administration of the antigen led to a partial saturation. Thus the process seems to be the expression of a positive anergic phase. A second series of tests corroborated this assumption. A refractory behavior of the papillary body at the site of the first vaccination can be excluded, since in the experiments the differences generally became manifest only after forty-eight hours, whereas after twenty-four hours the cutireactions were practically equivalent at the previously treated and the untreated sites. The complete immunity of the site of vaccination to the generalized exanthem can be explained by the small amount of the resorbed antigen. These local immunity reactions explain the therapeutic results of local vaccinations, such as the vaccination of the portio vaginalis, the vulvovaginal gland and the rectal mucous membrane.

Deutsches Archiv für klinische Medizin, Berlin

175: 129-264 (May 12) 1933. Partial Index

*Clinical Significance of Q Wave in Electrocardiogram. J. Freundlich.—p. 129.
Chronic Essential Thrombopenia and Endocrine System. L. Funstein.—p. 146.
Lead Poisoning and Demonstration of Lead. H. Bohnenkamp and W. Linneweh.—p. 157.
Patients with Heart Disease During Work. H. Dennig and S. H. Prodger.—p. 170.
Addisonism in Chronic Gastro-Enteritis. F. Diehl.—p. 177.
Hypoglycemic Shock and Its Action on Central Nervous System; Also Contribution to Its Pathogenesis. G. Bodechtel.—p. 188.
*Treatment of Gastric Ulcer by Means of Jejunal Catheter. H.-G. Scholtz and J. Brugsch.—p. 202.
*Central Nervous Regulation of Red Blood Picture. F. Salus.—p. 214.
Treatment of Anemias with Own Blood That Has Been Treated by Ultraviolet Rays. C. Fervers.—p. 226.
Cause of Crescendo Murmur of Mitral Stenosis. K. Gotsch.—p. 241.
Nocturnal Limitation of Diuresis. A. Jores.—p. 244.
Critical Investigations on Ectoscopy. E. Weisz.—p. 254.

Clinical Significance of Q Wave.—In studying the significance of the deep Q wave, Freundlich found that the enlargement of the Q wave always concurs with a change in the intermediate portion (RS up to T) or in the T wave in at least one of the three leads. The isolated appearance of the enlarged Q wave in the third lead is not necessarily pathologic, since it is observed occasionally in patients who have a high diaphragm but who are free from other cardiac changes. However, if an enlarged Q_3 concurs with an enlarged Q_2 or with an enlargement of the T wave or of the intermediate portion in leads 1 and 2, it is a symptom of myocardial infarct or of severe myocardial damage and usually indicates a coronary sclerosis (or stenosis of the coronary ostium resulting from syphilis). The appearance of a deep Q in the first lead has the same significance, even if there is no change in the ventricular complex in the first and second leads. In disturbances that are not the result of a coronary sclerosis (in rheumatic endocarditis and myocarditis and in thyrotoxicosis) an enlargement of the Q wave is extremely rare. The most frequent change in the ventricular complex during myocardial damage is an enlargement of the Q wave in the second and third leads (Q_3 larger than Q_2) combined with negativity of the T wave or with depression of the intermediate portion in the same leads.

Treatment of Gastric Ulcer by Means of Jejunal Catheter.—To determine the therapeutic value of jejunal catheter feeding in patients with gastric ulcer, Scholtz and Brugsch determined the acidity of the secretion of the fasting stomach and compared it with the acidity during periods when the patients received a porridge diet. They also tested the acidity of the urine. The results of the investigations indicate that feeding by means of the jejunal catheter produces a greater secretory rest for the stomach than does the customary porridge diet. Scholtz also tested the effect of jejunal feeding on the gastric motility and found that this method rests the stomach greatly.

Central Regulation of Red Blood Picture.—Salus describes the clinical histories of five patients with polyglobulism. In three the condition concurred with narcolepsy, in one with postencephalitic obesity and slight parkinsonism, and in the fifth with sarcoma of the frontal brain and mesencephalohypophyseal symptoms. He thinks that the concurrence of narcolepsy and polyglobulism, or of narcolepsy, polyglobulism and mesencephalohypophyseal disturbances indicates that in the gray matter of the mesencephalon there is a center which regulates the formation and the disintegration of the erythrocytes. He cites other investigators whose observations indicate such a regulatory center.

Wiener klinische Wochenschrift, Vienna

46: 641-672 (May 26) 1933

From the Workshop of the Anatomist. E. Pernkopf.—p. 641.
Biologic Action of Ultrashort Waves. S. Jellinek.—p. 646.
*Diagnostic Remarks on Sciaticas. I. Silbermann.—p. 650.
Allergic Diseases of Mucous Membranes. K. Hajós.—p. 652.
*Pyuria of Children. J. Siegl.—p. 655.
Instrument for Introduction of Medicated Pencils into Urethra and Cervix Uteri. E. Lindenfeld.—p. 659.
Intravenous Continuous Drop Infusion. J. Schnitzler.—p. 659.

Sciatica.—Silbermann calls attention to a form of sciatica refractory to the usual modes of treatment. Its most important symptom is that the percussion of the lumbar or of the thoracic portions of the vertebral column results in the radiation of pain to the region of the sciatic nerve. Bending of the vertebral column laterally and slightly forward or backward, and movements of the head, particularly to the side opposite to the affected leg, likewise produce the radiating pains. Roentgenoscopy of the vertebral column reveals mostly normal conditions. The cell count and the protein values of the spinal fluid are generally normal. The anamnesis reveals that a cold or an influenza has preceded the sciatica. The discovery of arachnoiditic adhesions convinced the author that this form of chronic sciatica is caused by an inflammation of the soft spinal meninges; that is, by a chronic arachnoiditis. The nerve roots that otherwise move freely in the foramen spinale have become fixed by inflamed and edematous tissues and, by painful defense mechanisms, resist the stretching that results from movements. For the treatment of this form the author recommends injection of a vaccine, roentgen irradiation of the involved parts of the vertebral column and prolonged rest in bed.

Pyuria of Children.—Siegl states that in recent years the term pyuria, which simply designates the main symptom and dispenses with exact differentiation and topical diagnosis, has been widely accepted. In nurslings and small children, the acute form of pyuria predominates. The clinical aspects are usually those of a severe infectious disease. Some of the symptoms may easily lead to an erroneous diagnosis; for instance, the accelerated respiration may lead to the diagnosis of pneumonia or, if diarrhea exists, typhoid may be thought of, and, in older children who can describe their pains, the condition may be mistaken for appendicitis. To avoid such erroneous diagnoses, the examination of the urine is of the greatest importance. However, besides the misleading symptoms, children with acute pyuria also show a behavior and an appearance that is characteristic for this disturbance. They are restless, have a frightened look and present an ashy pallor which may appear somewhat icteric. Besides these acute forms, pyuria may also occur as an accompanying symptom in dystrophic and atrophic nurslings. In discussing the pathogenesis of pyuria, the author evaluates vitamin deficiency, malformations of the urinary tract, calculi and urogenital tuberculosis. In the secondary pyurias the prognosis depends on the primary disorder, and in the acute forms on the general condition and on the development of complications. Death from urosepsis is comparatively rare. The treatment should consider the various

causal factors. In the acute forms the improvement of the general condition, an adequate fluid supply and a correct diet are essential.

Zeitschrift für Krebsforchung, Berlin

39: 93-218 (May 23) 1933. Partial Index

*Tumor Growth and Vitamins. E. Fränkel and P. Geréb.—p. 93.
Seasonal Fluctuations of Mortality from Cancer and Tuberculosis. P. Geréb.—p. 104.
Aspects of Mixed Tumors of Mamma of Dogs. K. Nieberle.—p. 113.
Nerves in Tumors, Away from Tared Area. M. N. Meissel.—p. 128.
Susceptibility of Skin of Mice to Sarcoma Virus. A. Besredka and L. Gross.—p. 138.
Port of Entry for Sarcoma Virus in Mice. A. Besredka and L. Gross.—p. 143.
*Influence of Vitamin E on Inoculation Tumors. P. Engel.—p. 148.
Carcinoma of Maxillary Sinus and Metaplasia. W. Schütz.—p. 152.
Statistical Studies on Cancer in Düsseldorf. L. Thomas.—p. 168.
Unusual Case of Sarcoma of Mucous Membrane of Uterine Cavity. H. Offergeld.—p. 191.
*Primary Carcinoma in a Meckel's Diverticulum. K. Franke.—p. 206.

Tumor Growth and Vitamins.—By feeding animals with excessive amounts of vitamins A, B, C and D, Fränkel and Geréb succeeded in transplanting the Jensen rat sarcoma to twelve out of thirty-two mice; this was possible only in two of thirty mice receiving an ordinary diet, and the heterologic transplantation was never successful in thirty-nine mice receiving food deficient in vitamin and mineral contents. The tumors reached considerable size under the influence of the excessive amounts of vitamins and, as a result, some of the animals died. Preliminary feeding with a diet of high vitamin content made it possible in one out of ten animals to transplant the rat tumor in the second generation from mouse to mouse, and in a second experiment this was possible in two out of eleven animals. This was never possible in mice that had received a normal or a vitamin deficient diet. The heterologic mouse tumor that developed in animals receiving a normal diet could not be transplanted further, not even to hypervitaminotic animals. Vaccination of the tumor from the mouse back again to the rat was always possible, irrespective of the diet. The inhibiting influence exerted on the growth of vaccination tumors by gestation or lactation could be nullified by feeding with large amounts of vitamins. A diet with high vitamin content also promoted relapse after incomplete removal of the Jensen rat sarcoma. For this reason the authors consider it advisable that patients who have been operated on for malignant tumors should receive a diet that, although providing a sufficient amount of calories, has a low vitamin content.

Influence of Vitamin E on Inoculation Tumors.—Engel found that the growth of vaccination tumors is not noticeably influenced by parenterally administered wheat germ oil with its high vitamin E content. The life span of the carcinomatous animals was reduced by this substance, and the growth of their neoplasms was not promoted. The sarcomatous animals were considerably less impaired. This is the more surprising since, according to the observations of Evans, a more pronounced modification is to be expected in tumors of mesodermal origin.

Primary Carcinoma in Meckel's Diverticulum.—Franke relates the history of a man, aged 54, who was operated on because of ileus symptoms. A Meckel's diverticulum the size of a fist was found. Its surface was ulcerated and it exuded jelly-like, mucous matter. The histologic examination revealed an adenocarcinoma with marked formation of mucus but without metastases. The patient recovered. The author points out that primary carcinoma of Meckel's diverticulum is extremely rare. He found only one other case, reported by Wissely in the American literature. He assumes that the primary carcinomas of Meckel's diverticulum develop from scattered embyonal traces; that for a long time they take an entirely benign course, and that, when they are removed early enough, they show a better tendency to heal than do other carcinomas.

Zentralblatt für Gynäkologie, Leipzig

57: 1201-1264 (May 27) 1933

Influence of Extract of Posterior Lobe of Hypophysis and of Thyroxine on Lactation. F. G. Dietel.—p. 1202.
Antibody Demonstration in Cervical Secretion. J. Schwarz.—p. 1205.
Results of Clinical Obstetrics. H. Nevinny.—p. 1210.
*Closed Ovarian Actinomycosis. E. Rumpf.—p. 1216.
Is Atmocausis Still Practical? L. Paullig.—p. 1218.
Vulvovaginal Anus and Virginal Prolapse. K. E. Fecht.—p. 1221.
*Apiol Poisoning. J. Seiffert.—p. 1223.
*Modification of Cleidotomy. N. A. Pantschenko.—p. 1227.

Closed Ovarian Actinomycosis.—Rumpf presents the clinical history of a woman, aged 40, who, about a year after an appendectomy, underwent a laparotomy on account of ovarian cysts and a uterine myoma. Histologic examination revealed a closed ovarian actinomycosis. The woman died five days after the operation. The case differs from most of the previously reported ones in that there was no absolute growth tendency and the content of the tumors was not suppurative. The author assumes an intestinal mode of infection.

Apiol Poisoning.—Seiffert discusses the form of polyneuritis that in recent years has been observed frequently following the use of the abortifacient apiol. He points out that the intoxication is not caused by the pure apiol but rather by an admixture, the triorthocresyl phosphate. Since little has been said about the outcome of the apiol intoxications, the author reports a case which was under his observation more than a year. Following ingestion of apiol, the patient had attacks of vertigo, nausea and vomiting, and a feeling of weakness in the extremities, particularly the legs. The neurologic examination revealed a reduced electrical reactivity of the muscles of the hand, particularly in the region of the median nerve. These muscles appeared atrophied, and all the nerves of the arm were painful to pressure. The tendon reflexes of the knee were hardly elicitable and the achilles tendon reflexes were abolished. The movements of the hip and of the knee were impaired and the motor power was considerably reduced. The peroneal and tibial nerves and the muscles of the leg were extremely sensitive to pressure. The patient could not stand or walk without the aid of other persons. The increase in pain, the unbearable headaches and the continuous vomiting induced the author to interrupt the pregnancy, but instead of improvement of the symptoms a considerable exacerbation was noticeable. Electrical treatments, massage and muscular exercises had no effect. The patient was not able to walk again without assistance until ten months after the poisoning. After twelve months, most of the symptoms had disappeared.

Modification of Cleidotomy.—Pantschenko directs attention to Chatunzew's modification of cleidotomy in which the incision is made deeper and the entire shoulder girdle is divided. If the resistance is especially great, the division should be followed by extraction of the arm, after which maneuver the delivery is readily accomplished. Compared to ordinary cleidotomy, this modification has the advantage that its technic is not more difficult but reduces the width of the shoulder girdle considerably more. The author states that the method can be employed in head presentations as well as in breech presentations, when the fetus is dead and the extraction of the arms is difficult. It is indicated in cases of narrow pelvis, large fetuses, obstructions on the soft parts of the parturient canal, and when rapid delivery is necessary in cases of insufficiently dilated os uteri.

Ugeskrift for Læger, Copenhagen

95: 573-602 (May 18) 1933

*Value of Circular Resection in Chronic Gastric or Duodenal Ulcer. K. Roholm.—p. 573.
Grave Urticaria Treated with Insulin. O. Wedel-Brandt.—p. 590.
Shoulder-Blade Shadow in Pulmonary Roentgenogram. O. Bouet.—p. 590.

Circular Resection in Chronic Gastric or Duodenal Ulcer.—Roholm reports 130 cases in which operation was performed between 1909 and 1931, of which 40 were transverse resections of the corpus of the stomach and 90 were pylororesections. After-examination was made in 105 cases, from one and one-fourth to twenty-two years later. Transverse resection of the corpus was abandoned because of the frequent development of new ulcers corresponding to the scar formation of the operation. Preliminary pylororesection in eighty-two cases resulted in recovery in 69.2 per cent, recovery or improvement in 81.5 per cent and poor results in 18.5 per cent. The mortality was 12.2 per cent. Polya's method seems to give better results than the first method of Billroth. Comparison between pylororesection and gastro-enterostomy, on the basis of Nielsen's after-examination in 101 cases of gastro-enterostomy done in the same hospital division from 1906 to 1916, fails to show any definite difference in the value of the two operative procedures when they are used as the normal method.